eum Library
OCT 23 1942

American Antiquity

A Quarterly Review of American Archaeology

Contents

The Geographical Distribution of Aboriginal Pottery in Canada. W. J. WINTEMBERG 129

Ossuaries on the Delmarva Peninsula and Exotic Influences in the Coastal Aspect of the Woodland Pattern. C. A. WESLAGER . 142

An Archaeological Reconnaissance of Northeastern Baja California and Southeastern California. ADAN E. TREGANZA 152

Symmetry in Primitive Conventional Design. GEORGE W. BRAINERD 164

The Moses Coulee Pipe. ALAN G. MAY 167

FACTS AND COMMENTS . . . . . *See Cover III*

NOTES AND NEWS 179

BOOK REVIEWS . . . . . *See Cover III*

ANNUAL MEETING 202

CONSTITUTION OF THE SOCIETY FOR AMERICAN ARCHAEOLOGY . 206

AMERICAN ANTIQUITY IS INDEXED IN THE INTERNATIONAL INDEX

Published by the

Society for American Archaeology

Vol. VIII *October, 1942* No. 2

SOCIETY FOR AMERICAN ARCHAEOLOGY

OFFICERS

President: NELS C. NELSON, American Museum of Natural History, New York City.

First Vice-President: ALFONSO CASO, Instituto Nacional de Antropología, Mexico, D.F.

Second Vice-President: HENRY B. COLLINS, JR., Bureau of American Ethnology, Washington, D. C.

Secretary: WALDO R. WEDEL, U. S. National Museum, Washington, D. C.

Treasurer: FREDERICK JOHNSON, Phillips Academy, Andover, Massachusetts.

Editor: DOUGLAS S. BYERS, Phillips Academy, Andover, Massachusetts.

Associate Editor: GEORGE C. VAILLANT, University Museum, Philadelphia, Pennsylvania.

Assistant Editors:
HENRY B. COLLINS, JR., Arctic Geographical Area.
E. W. GIFFORD, Pacific Coast Geographical Area.
ERIK K. REED, Southwestern Geographical Area.
WALDO R. WEDEL, Plains Geographical Area.
JAMES B. GRIFFIN, Northern Mississippi Geographical Area.
W. A. RITCHIE, Northeastern Geographical Area.
WM. S. WEBB, Southeastern Geographical Area.
J. ALDEN MASON, Middle American Geographical Area.
WENDELL C. BENNETT, South American Geographical Area.
F. H. H. ROBERTS, JR., Early Man in America.
FREDERICK JOHNSON, The Notebook.

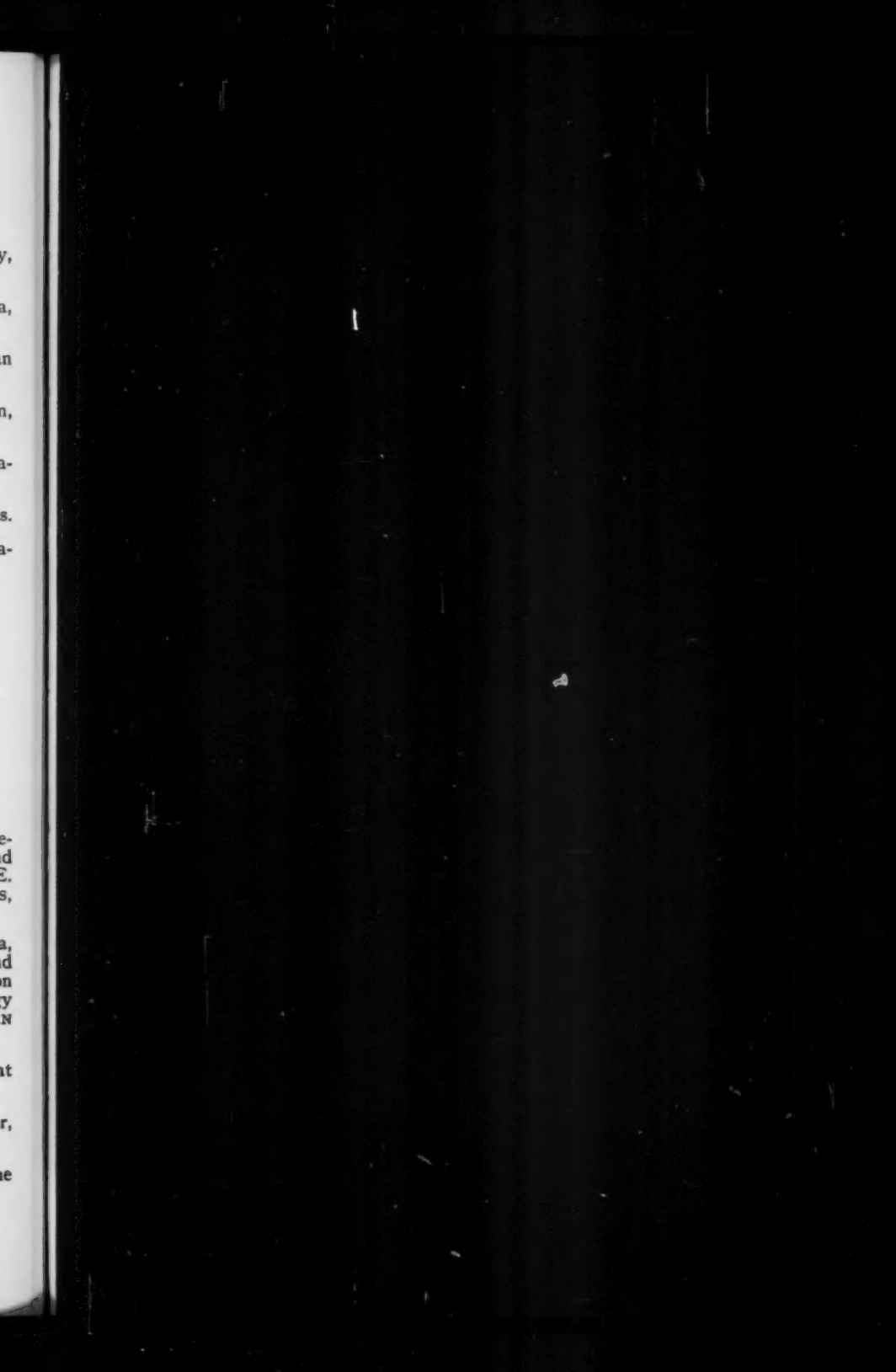
Members of Council: The President, First Vice-President, Second Vice-President, Secretary, Treasurer, Editor, Associate Editor, and HAROLD S. COLTON, JAMES FORD, JAMES B. GRIFFIN, CARL E. GUTHE, M. R. HARRINGTON, A. T. HILL, CHARLES R. KEYES, J. GILBERT MCALLISTER.

AMERICAN ANTIQUITY is published at 450–454 Ahnaip Street, Menasha, Wisconsin, quarterly in the months of January, April, July and October by the Society for American Archaeology. Subscription only by membership in the Society for American Archaeology (annual dues $3.00); includes the quarterly issues of AMERICAN ANTIQUITY and other releases as issued.

Entered as second-class matter July 22, 1935, at the post office at Menasha, Wisconsin, under the Act of March 3, 1879.

Contributions and publications for review should be sent to the Editor, Douglas S. Byers.

Subscriptions and orders for back numbers should be addressed to the Treasurer, Frederick Johnson.



AMERICAN ANTIQUITY

VOL. VIII OCTOBER, 1942 NO. 2

THE GEOGRAPHICAL DISTRIBUTION OF ABORIGINAL POTTERY IN CANADA*

W. J. WINTEMBERG

PRACTICALLY all of the aboriginal inhabitants of Canada, including the Eskimo,[1] made and used pottery. The only people who do not seem to have used it are the Indians of the coast and interior of British Columbia; in fact, according to Wissler,[2] "practically the whole Pacific belt . . . is without pottery."

As can be seen from the map (Fig. 7), pottery is fairly well distributed over the southern part of Canada, but even here our knowledge of its occurrence is far from complete, owing to the lack of archaeological exploration. There are vast areas elsewhere in Canada from which no pottery has been reported, including southern Ungava, northern Ontario, northern Manitoba, northern and western Alberta, and the Northwest Territories. I am sure that a careful search of the shores of Lake Athabasca and the smaller lakes between it and the west shore of Hudson Bay would reveal some fragments; even its occurrence on the shores of Great Slave Lake is possible. It may also be found at the headwaters of the Liard, Sikanni, and Peace Rivers, in northeastern British Columbia. None has been reported from Newfoundland, and it has been generally maintained that the Beothuk used no pottery, but the discovery of several pieces on the mainland, opposite the northern tip of the island, encourages the hope that it will ultimately be found there.

Speculations as to the implications of the distribution so far as intercontinental movements are concerned are useless because our knowledge of pottery distribution is still very incomplete, certainly too incomplete to be of much use in determining the route, or routes, taken by pottery-

* This paper, which was among Mr. Wintemberg's effects at the time of his death, was sent to AMERICAN ANTIQUITY by Dr. Leechman. Dr. James B. Griffin, who had talked with Mr. Wintemberg about this subject and who read the paper for him before Section H of the American Association for the Advancement of Science, Ottawa, 1938, has supplied a few editorial comments.

[1] Wissler, 1917, p. 67, says: "The Eskimo of Alaska and eastward at least as far as Coronation Gulf made it [pottery]." Pottery has been found at Point Stivins, Parry Peninsula (*American Anthropologist*, 1911), and Mathiassen found it in a site at Naujan, Melville Peninsula (Mathiassen, 1927, Pl. 27). [2] 1917, p. 67.

using emigrants from Asia, who, as postulated by McKern,[3] proceeded inland by way of the Yukon and Mackenzie River valleys to the Great Lakes area. There is still a gap of approximately two thousand miles between the most northerly occurrence of pottery in Canada, and Tanana in the Yukon valley in central Alaska, where some was discovered by de Laguna.[4] Nevertheless, this paper will at least give an idea of the present known distribution of pottery in Canada.

Exclusive of Eskimo, there are two major aboriginal culture manifestations represented in Canada, the Woodland and Mississippi patterns of the McKern classificatory system. Each is further divided into phases, aspects, and foci. Geographically the two patterns overlap, especially in eastern Canada, where Woodland pottery has actually been found in sites of the Mississippi pattern; but no site in Canada shows superimposed cultural deposits, that is, Mississippi over Woodland. In this paper, consideration will be given to the pottery of the Northeastern phase and of what is probably the Lake Michigan phase of the Woodland pattern, and the Upper Mississippi and Plains[5] Mississippi phases of the Mississippi pattern.

Woodland Pattern

As the Woodland is probably the older, the distribution of pottery of this pattern will be considered first. The Woodland occupation is certainly pre-contact, otherwise the pottery and other remains would be found associated with European trade material as is the case in many Iroquois sites. McKern believes the western Woodland manifestation is older than the Upper, Middle, and Plains Mississippi phases of the Mississippi pattern, and that "it appears to antedate all other pottery-making cultures, with the possible exception, in certain restricted locales, of the Elemental Aspect of the Hopewellian Phase."[6] He considers the Middle West as probably the oldest center of the Woodland culture, from which it spread to the west, south, and east.[7] Woodland village sites and mounds in Manitoba and northwestern Ontario possibly are equally old. Montgomery thinks the oldest of the mounds in southwestern Manitoba "were erected several centuries before the Mandan and other Siouan movements to the plains region began."[8] The discovery of decaying wooden poles in some of the mounds of that area, however, suggests that they were more recent, unless exceptional preservative conditions were present in the soil of the mound to retard decay. We

[3] 1937, pp. 142, 143. [4] 1936, p. 11.

[5] There is still some question as to the place of the Plains phase in a taxonomic arrangement of culture groups.—Ed. [6] McKern, 1937, p. 139.

[7] *Ibid.*, pp. 141, 142. [8] Montgomery, 1908, p. 40.

have no idea of the age of the Woodland culture in the east, except that in most cases it is definitely pre-European and apparently mostly pre-Iroquoian; however, there has been "some doubt as to its being the first pottery-bearing manifestation in the northeastern region."[9]

Geographically the distribution of Woodland pottery is more widespread than that of any other pottery, for it has been found from south central Alberta to the Labrador boundary and from Reindeer Lake[10] in northern Saskatchewan to the international border, extending southward in Ontario, to Elgin County. It has an equally wide distribution in the United States.

Most of the area in which Woodland pottery has been found was inhabited by Algonkian-speaking tribes. Its distribution in the Plains area as far west as Alberta coincides with the distribution of the Cree[11] and Blackfoot.[12] In the maritime provinces it is distributed through much of the area inhabited by Malecite and Micmac, and is probably attributable to them. Reindeer Lake, the present most northerly limit of pottery occurrence in Canada, although probably originally Algonkian territory, is within the area inhabited by Athabascans, among whom there is not even a tradition of the making and use of pottery.

Pottery from Alberta, Saskatchewan, Manitoba, and northwestern Ontario, some of that from the two last-mentioned areas found in burial mounds, exhibits almost all the characteristics of Woodland pottery, including a few [pots] that seem to have had straight sides, others with curved, flaring rims, and many with the surfaces cord-roughened, in some cases to the edge of the lip. This cord-roughening is a kind of surface treatment that seems more common in the Plains area than in the east, but it is not a distinctively Woodland trait as it is also seen on pottery of the Gulf[13] and Mississippi patterns. It is the decoration, however, that shows the strongest Woodland affinities, for it consists of straight and zigzag impressions made with rocking stamps, others made with figured stamps, and cord- or sinew-wound straight or looped twigs, and embossed nodes produced by punching holes from the inside or outside of the rims, the majority having the nodes on the inside. The straight impressions made with cord-wound twigs, the zigzags made

[9] McKern, 1937, p. 140.

[10] Downes, 1938. It also occurs at Cree Lake in about the same latitude.

[11] Fewkes (1937, p. 550) says the Cree of the seventeenth century "had no pottery." Skinner (1914, p. 82), however, remarks: "In ancient days pottery vessels are said to have been used, but no one knows how they were made."

[12] See Wissler, 1910, p. 26; and Sapir, 1923, p. 247.

[13] Wintemberg's Ms. says "Gulf" although no such pattern has ever been described by any worker. As his meaning is not clear, we have not undertaken to indicate any alternative for the word Gulf.—Ed.

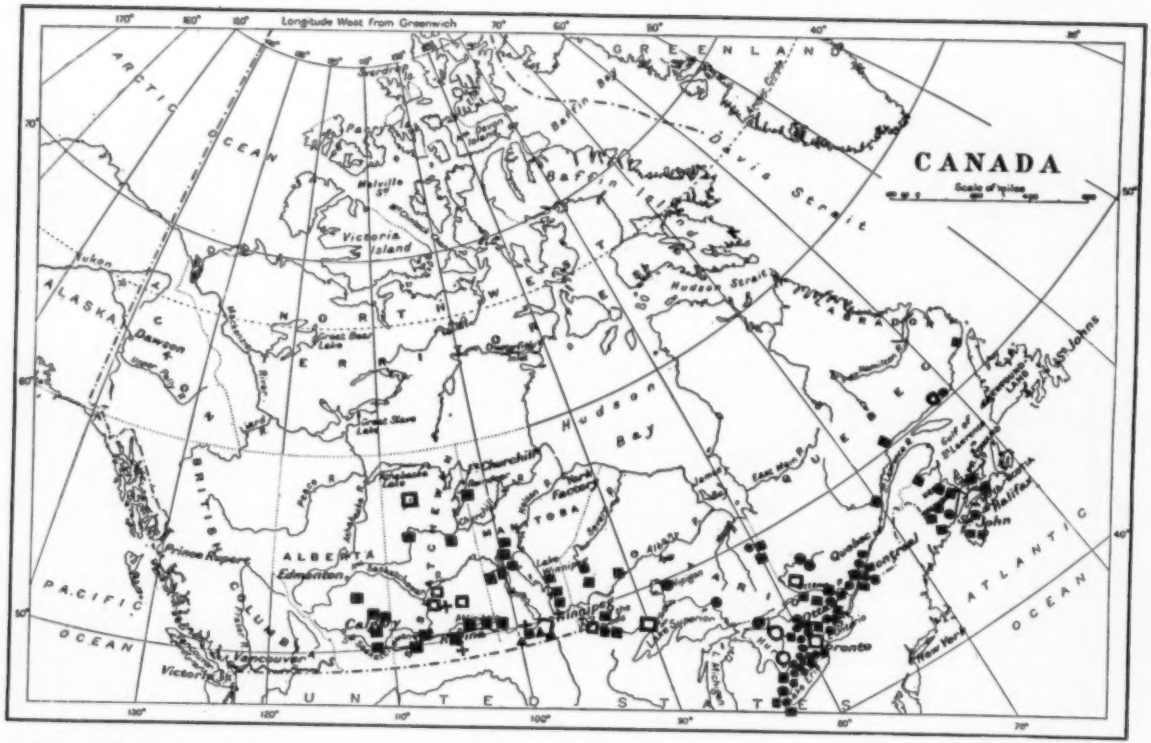


FIG. 7.—Distribution of aboriginal pottery in Canada. Round dots or circles, Iroquoian; squares, Woodland; triangles, Mandan; crosses, uncertain.

The map, which was prepared by Mr. Wintemberg before his death in April, 1941, was originally intended for use as a lantern slide, different colors being used to indicate different cultures. In revising it for publication, the colors have been eliminated, and differences in form have been substituted. In the original map, some of the dots were ring-shaped, others were solid; no explanation of the meaning of this distinction has been found in Mr. Wintemberg's notes, but it has been transferred to the map in its present form.

with rocking stamps, and the embossed nodes, however, are the only purely Woodland decorative traits[14] that seem to warrant the inclusion of this pottery in that culture pattern.

Woodland pottery from eastern Canada may be assignable to Ritchie's Owasco and Vine Valley aspects of the Northeastern phase.[15] [Some, also, may be assignable to Ritchie's Laurentian.] Pottery, apparently all of the Owasco aspect, some of which shows more or less Iroquois influence, has been found from Essex County west to Lennox County, but it will probably be found in other parts of Ontario. Pottery, probably of the Vine Valley aspect, some of which is from mounds, has been found from Essex County in the west to Russell County in the east. In Quebec, it has been found in Pontiac, Hull, Two Mountains, Huntingdon, Iberville, Champlain, and Saguenay Counties; in the last, in two localities four hundred miles apart, i.e., at Seven Islands, and near Bradore Bay on the north side of the Strait of Belle Isle. Although isolated occurrences may not be very significant, the occurrence of undoubted Woodland pottery and stone artifacts, including a stone gouge, in the sites near Bradore Bay, seems to indicate that a Woodland people had established itself there, evidently in pre-Eskimoan times, because if the sites had been occupied after the Eskimo abandoned the north shore of the Gulf of St. Lawrence,[16] articles of European origin would undoubtedly have been found associated with the pottery and artifacts. Probably they were the same gouge-using people as those of whom traces were discovered by Strong[17] on the Labrador coast, although he found no pottery.[18] In New Brunswick, pottery has been found in Charlotte, Kent, Northumberland, Queens, Sunbury, and York Counties. Its occurrence in Nova Scotia at present is limited to the Counties of Annapolis, Halifax, Lunenburg, Pictou, and Queens. In

---

[14] Cord impressed decoration occurs in Woodland as early as Baumer in the Mississippi Valley, is in the Southeast on early Woodland pottery, and is characteristic of late Upper Mississippi Valley Woodland pottery.—J.B.G. [15] Ritchie, 1936.

[16] See Handbook of American Indians, s.v. "Eskimo." They retained their hold on the coast until 1600, when the Indians, supplied with guns by the French "drove them eastward as far as the Strait of Belle Isle, where they maintained a fortified camp on an island near the west end of the Strait until 1630" (Low, 1896, p. 51 L).

[17] Strong, 1930.

[18] In the summer of 1934, while working at an old Eskimo village site at Hopedale, Labrador, Mr. Junius Bird, of the American Museum of Natural History, New York, found a rim fragment of what seems to be the Woodland type of pottery "on the paved floor of the entrance tunnel of one of the older house ruins." Among the artifacts removed from the same ruins were pieces of wrought iron nails which would limit the age of this particular ruin to perhaps 400 years maximum. This piece may have been picked up by Eskimos from the surface of an older Woodland site.

Prince Edward Island, it has only been found on the north coast, in Queen's County, but it should be present elsewhere on the island.

Mississippi Pattern

The pottery of the Mississippi pattern found in Canada belongs to the Iroquois and Fort Ancient aspects of the Upper Mississippi phase, and what I may tentatively style the Mandan focus of the Plains Mississippi phase.

In Canada, the potter's art reached its highest development among the pre-contact Iroquois of Ontario and Quebec, among whom its development was encouraged by their sedentary mode of life. The rims show a greater degree of specialization than those of other Canadian pottery. It is generally believed that the Iroquois came into Canada at a much later date than the Woodland people, and that none, even of the oldest sites, is probably more than seven or eight hundred years old;[19] many are even more recent than that, especially Huron and Tionontati, many of whose sites date no further back than 1615, when they were first visited by Champlain. Although not so widely distributed as that of the Woodland pattern, the pottery of the Iroquois aspect has been found almost half-way across the continent. The most northerly as well as the most easterly occurrence of this pottery is near Kegashka, on the north shore of the Gulf of St. Lawrence, about six hundred miles northeast of the city of Quebec. Part of one pot, found near the mouth of the Kegashka River, bears chequered paddle markings indistinguishable from similar markings on pottery from the Roebuck village site in eastern Ontario. Another pot, of which body and rim fragments were found near the village of Kegashka, about three miles farther east, is also unmistakably Iroquois. The presence of several strips of sheet copper, apparently cut from kettles obtained from Europeans, in the same site, would seem to indicate a post-European date. The nearest Iroquois people who could have ventured so far east were the Stadaconans. The fact that the two Indian boys from Stadacona, who were taken to France by Cartier in 1534, seemed familiar with the waters in the vicinity of Anticosti Island and the north shore, makes it probably that hunting and fishing parties from that village were in the habit of going as far east as Kegashka, perhaps even farther east.

The discovery on Indian Point, Grand Lake, New Brunswick, of a rim fragment bearing complex, trailed-line decoration, like that on Iroquois pots[20] need not occasion any surprise, because pots of the same

[19] Parker, 1916, p. 479.

[20] See McIntosh, 1909, Pl. 1, Fig. 7. Through the kind courtesy of Dr. McIntosh I had a chance to see this piece which is undoubtedly of Iroquois origin.

people have been found on the coast of New England.[21] If there is any truth in tales of their conflicts with the Mohawk, the Indians of this area must have had frequent contacts with those people, with opportunities for acquiring articles foreign to their culture.[22]

The most northerly record of its occurrence in Ontario is at Lake Abitibi, on the boundary between Ontario and Quebec, where fragments of four [Mississippi pattern] pots were found associated with fragments of several Woodland pots. Other pieces have been discovered at Lac Simon, near Grand Lac Victoria; at Lac Kakabonga,[23] near the headwaters of the Ottawa River, Pontiac County, Quebec; on an island in Lake Temiskaming, near the mouth of the Matabitchuan River, Timiskaming district; and near Severn Portage, Muskoka district, Ontario.[24] These are all north of Simcoe County, long considered the northern limit of Iroquois territory, and suggest a possible northward movement of Hurons subsequent to their establishment of villages in that county. Hunter seems to think that the Hurons moved northward to the townships bordering on Georgian Bay after 1615.[25] Here they were hemmed in by the waters of the bay and could not get any farther away from their Iroquois foes in that direction, and, as the area was contiguous, there was nothing to prevent them from having scattered hunting camps and even a few villages in what is now Muskoka, Parry Sound, and perhaps northern Ontario and Quebec. This seems to me more likely than that the pottery was left by marauding bands of Iroquois from what is now New York State, or that it had been carried there as an article of trade.

The most westerly discovery of which there is any record consists of two rim fragments of a pot found near Lake Nipigon,[26] Thunder Bay district, Ontario,[27] which Holmes included in his "Northwestern Group"

[21] See Hooton and Willoughby, Figs. 115*b*, and 116*a*, *b*.

[22] Another evidence of trade or contact consists of the bowl of an earthenware pipe with a human face mask on the back, which was found in Victoria County, New Brunswick (See Bailey, 1887, Pl. II, Fig. 9); pipes with similar masks are common in Iroquois sites in Ontario and New York. At least three fragments of Woodland pottery found at Maquapit and French Lakes, New Brunswick, have overhanging collars which may be due to Iroquois influence; one is illustrated by McIntoch, 1909, Pl. 1, Fig. 12.

[23] Johnson, 1930, pp. 32–33.

[24] See Boyle, 1900, Fig. 25.

[25] Hunter, 1893, pp. 227–228.

[26] Holmes, 1903, Fig. 77.

[27] The Iroquois are known to have ranged as far west as the Mississippi, but do not seem to have established many permanent settlements, as in the east, and we have no definite record of the occurrence of pottery. Holmes (1903, p. 197) thinks the patterns on some pottery from Two Rivers, Wisconsin, resemble those on Iroquois pottery. Some of them have overhanging collars, see cross-sections in Holmes, 1903, Fig. 76, 5–9. The discovery of earthenware pipes of the same types as some from Iroquois sites in Ontario and New York (West, 1934, Pl. 215), and the fact that the Hurons lived for a while in Wisconsin, makes it probable that Iroquois pottery will eventually be found there. Winchell (1911, pp. 455–456) sees Iroquois resemblances in pottery from Minnesota.

of pottery, but the vessel is of undoubted Iroquois origin; undoubted Iroquois pottery was found on Isle Royale recently. About one hundred and fifty miles farther east, in a grave at the mouth of the Michipicoten River, on the north shore of Lake Superior, was found a typical Iroquois pot with globular body, overhanging rim, and a spout-like projection on one side. The presence of two Woodland pots in the same grave makes it likely that the grave itself was of a Woodland people and that the pot reached this place through them rather than the Iroquois. Another pot (in fragments, some of which were not recovered) found on an island in Mindemoya Lake, Manitoulin Island,[28] may have been left by Hurons or Tionontati: the Hurons, at least, are known to have fled to Manitoulin after they left their refuge on Christian Island. The extensive and elaborate decoration on the sides of the pot, however, suggests that it was left by Tionontati, for pottery with similar extensively decorated sides was common in a site of that people in Simcoe County, which I excavated some years ago. The presence of a brass buckle or brooch plate and some beads (glass?) on the island where the pottery was found, presumably in the same spot, suggests that it was of late introduction into the island; at any rate, if it was left by either Hurons or Tionontati, it must have been after 1649. Several sites near Wikewemikong, in which fragments of earthenware pipes and pots were found, and where old corn hills could still be seen, mentioned by Captain T. G. Anderson in his journal,[29] perhaps are attributable to either the Huron or Tionontati rather than to the Ottawa, who are supposed to have had habitations there when early French traders arrived.

Iroquois pottery is pretty well distributed through southern Ontario; there are only a few counties in the province from which we have no records of its occurrence (Huron, Wellington, Welland?, Parry Sound, Haliburton, and Prescott). In Quebec, besides the fragments found near Kegashka, its distribution is confined to Berthier, Iberville, Vercheres, Hochelaga, Huntingdon, Hull,[30] and Pontiac[31] Counties, in the last two chiefly in the valley of the Ottawa River, in crevices in rocks.

Tentatively, the pottery is included, roughly, in the following different foci[32] of the Iroquois aspect; that from sites in western Quebec and

[28] See illustrations of this pot in Boyle, 1888, Fig. 3; Holmes, 1903, Pl. CXLVIII, Fig. *f*; and Smith, 1923, Pl. XLVII, Fig. 3.

[29] Extracts from this journal were published in the *Orillia Packet* of February 27, 1885, and reprinted in the *Montreal Gazette*, March 4, 1885.

[30] See Smith, 1923, Pls. LXXXII and LXXXIII, Fig. 2, from Eardley Twp.

[31] See illustration in Dawson, 1859.

[32] Among other points suggested to Wintemberg in the fall of 1939 was that his foci should not be given tribal names. He replied on October 19 that he would use Hochelaga focus for Mohawk-Oneida-Onondaga focus; Nottawasaga focus instead of Tionontati;

Ontario as far west, probably, as Victoria County, in the Mohawk-Oneida-Onondaga [Hochelaga] focus; that from certain sites in Victoria, Peterborough, Durham, Ontario, York, Peel, and Simcoe Counties, in the Huron [Lake Simcoe] focus; that from sites in Nottawasaga Township, Simcoe County, west to the northern tip of Bruce Peninsula, in the Tionontati [Nottawasaga] focus; and that from counties along the north shore of Lake Erie and from Middlesex, Oxford, Brant, Waterloo, Wentworth, and Lincoln Counties, in the Neutral focus.[33]

Other pottery from post-contact sites east of the Grand River, in southwestern Ontario, is probably attributable to the Seneca, who evidently came in soon after the final conquest of the Neutrals in 1652.[34] I am certain that some of the pottery from post-European sites in Prince Edward County, and from graves on the shore of Baptiste Lake in the northern part of Hastings County, can be attributed to the Cayuga-Seneca, who, with a few adopted Hurons, came into Prince Edward County and established villages near the French mission of Kenté in 1668. Considerable work remains to be done to define the boundaries between all these different groups.

Other pottery of the Upper Mississippi phase found in Ontario is intrusive. Several fragments of small, shell tempered pots, with broad strap handles and cord-roughened bodies,[35] have been found in what are evidently post-contact Seneca sites in Halton and Wentworth Counties. Two other fragments with the same kind of handle and cord-roughened surface, but with grit tempering, were found in Tionontati sites in Grey and Simcoe Counties. They are like two whole pots discovered by Parker[36] in the Dann site, Monroe County, New York, which he attributes to the Seneca of 1660–1690. These are all indistinguishable from some pots of the Madisonville focus, Fort Ancient aspect.[37] Those from Halton and Wentworth Counties were probably obtained by Senecas on one of their forays into the Ohio valley, but it is not so easy to account for those from Tionontati sites, unless they were obtained through trade from the south, which is by no means unlikely, because many artifacts of southern origin are found in post-contact sites of that people.

---

and Lake Simcoe focus instead of Huron focus. He had not decided on a name for the Neutral focus.—J.B.G.

[33] I have already discussed the differences between the pottery of these different foci (Wintemberg, 1931).

[34] The village of Tinaouatoua visited by Galinée and his party in 1669, one of whose locations I believe was at the well-known post-European site at Lake Medad, Halton County, was a Seneca village. [35] Wintemberg, 1926, Fig. 4. [36] 1922, Pl. 30.

[37] Hooton and Willoughby, 1920, Pl. 22, lower figure; and Holmes, 1903, Pl. CLXIV, Fig. *a*.

Judging from the decoration and overhanging collars, a few fragments from Belmont, and mounds and village sites near Sourisford, in southern Manitoba, are attributable to the Mandan.[38] Mandan and Woodland pottery both bear cord-impressed decoration, but there is a difference in the methods used in producing the decoration. On Mandan pottery it is made by pressing individual cords lengthwise into the clay, whereas on the Woodland it was produced with either cord-wound straight or looped twigs.[39] Some of the Mandan pottery from Manitoba, besides horizontal cord-marked lines, has groups of curved or U-shaped lines below the peaked parts of the rim, and notches on the lower angle of the collar formed by pinching the clay between the thumb and forefinger, a common form of decoration on rims of Mandan pots from North Dakota. Others are decorated with diagonal cord-impressed lines and one has, in addition, a row of deep, rounded depressions made with the tip of the little finger. Another is also like a Mandan pot from North Dakota in having rounded flanges projecting at intervals from the rim. It would appear from the occurrence of their pottery that the Mandans occasionally moved into what is now Manitoba and perhaps even resided in temporary villages there,[40] but the spread northward was probably comparatively recent. Bismarck, North Dakota, where there are several Mandan sites that yield an abundance of similar pottery,[41] is only about one hundred and fifty miles south of Sourisford. Half-breeds informed Hind, when he opened some mounds near Sourisford in 1858, that they were "an old Mandan village."[42]

Other pots (both whole and in fragments) from the Red River; from Sourisford, Manitoba; and from Saskatchewan, I hesitate to ascribe to any particular aspect, but it seems certain they should be included in the Plains Mississippi phase of the Mississippi pattern. Some are decorated from the neck downwards with parallel, trailed, encircling lines or grooves, or spiral lines which commence in the neck and terminate in the center of the base,[43] the latter decoration being like that on pots

---

[38] Fewkes (1937, p. 151) seems to be impressed with the resemblances to Mandan ware, and he considers some of it "strongly suggestive of Siouan or Caddoan provenience" (p. 150). Nickerson (N. D.) also thought the cord-impressed decoration on pottery from Sourisford was suggestive of that on Mandan pots.

[39] See fn. 14. p. 133 above. The fact that cord impressed decoration was characteristic of northern Mississippi Valley Woodland would render Wintemberg's interpretation of the occurrence of this style as evidence of Mandan presence or contact not a necessary or sound conclusion. These may as easily be Woodland vessels. This style is as early as Baumer and the Alexander Series.—Ed.

[40] See fn. 39.

[41] Will and Spinden, 1906, pp. 148–149.

[42] Hind, 1860, p. 299.

[43] See Montgomery, 1908, Pl. III, Fig. *a;* one of these is illustrated by Smith, 1923, Pl. XLIV, Fig. 5.

found by Montgomery in mounds in the Dakotas.[44]

A few other pots are small, globular-bodied vessels with pointed lateral expansions on four sides of the rim, the only decoration being on the flattened edges of the lip and on top of the expansions.[45] If these are of Siouan origin, it would be in harmony with the historical, but comparatively recent, movement of the Assiniboine into the region around the Lake of the Woods and south of Lake Winnipeg.

BIBLIOGRAPHY[46]

American Anthropologist
1911. Vol. 13, p. 727.

BAILEY, L. W.
1887. "On the Relics of the Stone Age in New Brunswick." *Bulletin of the Natural History Society of New Brunswick*, Vol. 6, pp. 3–16. St. John.

BOYLE, DAVID
1888. "Archaeological Report." *Annual Report of the Canadian Institute*, pp. 9–58. Toronto.
1900. "Archaeological Report." *Annual Report of the Canadian Institute.*

DAWSON, SIR J. W.
1859. "On a Specimen of Aboriginal Pottery in the Museum of the Natural History Society of Montreal." *Canadian Record of Science*, Vol. 4, pp. 186–190.

DOWNES, P.
1938. "Reindeer Lake Pottery." AMERICAN ANTIQUITY, Vol. 4, p. 48.

FEWKES, VLADIMIR
1937. "Aboriginal Potsherds from the Red River, Manitoba." AMERICAN ANTIQUITY, Vol. 3, pp. 143–155.

HIND, HENRY YOULE
1860. *Narrative of the Canadian Red River Expedition of 1857 and of the Assiniboine and Saskatchewan of 1858.* London. Vol. 1.

HOLMES, WILLIAM HENRY
1903. *Aboriginal Pottery of the Eastern United States.* Twentieth Annual Report of the Bureau of American Ethnology, pp. 1–201. Washington.

HOOTON, E. A. AND C. C. WILLOUGHBY
1920. *Indian Village Site and Cemetery near Madisonville, Ohio.* Papers of the Peabody Museum of American Archaeology, Harvard University, Vol. 8, No. 1. Cambridge.

HUNTER, A. F.
1893. "National Characteristics and Migrations of the Hurons as indicated by their Remains in North Simcoe." *Transactions of the Canadian Institute*, Vol. 3, pp. 225–228. Toronto.

JOHNSON, FREDERICK
1930. "An Algonkian Band at Lac Barriere, Province of Quebec." *Indian*

[44] Montgomery, 1906, Pl. XXXI, Figs. *d* and *f*.

[45] One from a mound near Sourisford is illustrated by Smith, 1923, Pl. XLIV, Fig. 6.

[46] Bibliography and references in text stand as Mr. Wintemberg left them except that references to the Downes, Nickerson and Ritchie items have been inserted. There is no reference in text for the Quimby, and Wintemberg 1930, and 1936 items.—Ed.

Notes, Vol. 7, pp. 27–39. Museum of the American Indian, Heye Foundation, New York.

LAGUNA, FREDERICA DE
1936. "An Archaeological Reconnaissance of the Middle and Lower Yukon Valley." AMERICAN ANTIQUITY, Vol. 2, pp. 6–12.

LOW, A. P.
1896. *Report on Explorations in the Labrador Peninsula—in 1892–93–94–95.* Geological Survey of Canada, Vol. 3. Ottawa.

MCINTOSH, WILLIAM
1909. "Aboriginal Pottery of New Brunswick." *Bulletin of the Natural History Society of New Brunswick*, Vol. 6, pp. 110–120.

MCKERN, W. C.
1937. "An Hypothesis for the Asiatic Origin of the Woodland Culture Pattern." AMERICAN ANTIQUITY, Vol. 3, pp. 138–143.

MATHIASSEN, THERKEL
1927. *Archaeology of the Central Eskimos, Part 1.* Report of the Fifth Thule Expedition 1921–1924. Vol. 4. Copenhagen.

MONTGOMERY, HENRY
1906. "Remains of Prehistoric Man in the Dakotas." *American Anthropologist*, Vol. 8, pp. 640–651.
1908. "Prehistoric Man in Manitoba and Saskatchewan." *American Anthropologist*, Vol. 10, pp. 33–40.

NICKERSON, W. B.
N.D. "Manuscript Reports on Field Work in Manitoba, 1912–1915." In the files of the Division of Archaeology, National Museum of Canada, Ottawa.

PARKER, ARTHUR C.
1916. "The Origin of the Iroquois as Suggested by Their Archaeology." *American Anthropologist*, Vol. 18, pp. 479–507.
1922. *The Archaeological History of New York.* New York State Museum Bulletins 235, 236. Albany, N. Y.

QUIMBY, GEORGE I.
1939. "Aboriginal Camp Sites on Isle Royale, Michigan." AMERICAN ANTIQUITY, Vol. 4, pp. 215–223.

RITCHIE, WILLIAM A.
1936. *A Prehistoric Fortified Village Site at Canadaigua, Ontario County, New York.* Research Records of the Rochester Museum of Arts and Sciences, No. 3.

SAPIR, EDWARD
1923. "A Note on Sarcee Pottery." *American Anthropologist*, Vol. 25, pp. 247–253.

SKINNER, ALANSON
1914. "Notes on the Plains Cree." *American Anthropologist*, Vol. 16, p. 82.

SMITH, HARLAN I.
1923. *An Album of Prehistoric Canadian Art.* National Museum of Canada, Bulletin 37. Ottawa.

STRONG, WILLIAM DUNCAN
1930. "A Stone Culture from Northern Labrador and its Relation to the Eskimo-like Cultures of the Northeast." *American Anthropologist*, Vol. 32, pp. 126–144.

WEST, GEORGE A.
1934. *Tobacco, Pipes, and Smoking Customs of the American Indians.* Bulletin of the Public Museum of the City of Milwaukee, Vol. 17.

WILL, G. F. AND H. J. SPINDEN
1906. *The Mandans; A Study of Their Culture, Archaeology and Language.* Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. 3, No. 4. Cambridge.

WINCHELL, N. H.
1911. *The Aborigines of Minnesota.* Published by the Minnesota Historical Society, St. Paul.

WINTEMBERG, W. J.
1926. "Foreign Aboriginal Artifacts from post-European Iroquoian Sites in Ontario." *Transactions of the Royal Society of Canada,* Third Series. Vol. 20, pp. 37–53, Section II. Ottowa.
1930. Review of W. D. Strong's "A Stone Culture from Northern Labrador and its Relation to the Eskimo-like Cultures of the Northeast." *Geographical Review,* Vol. 20, p. 673.
1931. "Distinguishing Characteristics of Algonkian and Iroquoian Cultures." *National Museum of Canada, Annual Report 1929,* pp. 65–125.
1936. *Roebuck Prehistoric Village Site, Grenville County, Ontario.* National Museum of Canada, Bulletin 83. Ottawa.

WISSLER, CLARK
1910. *Material Culture of the Blackfoot Indians.* Anthropological Papers of the American Museum of Natural History, Vol. 5.
1917. *The American Indian.* New York.

OSSUARIES ON THE DELMARVA PENINSULA AND EXOTIC INFLUENCES IN THE COASTAL ASPECT OF THE WOODLAND PATTERN

C. A. WESLAGER

ADDITIONAL details of a unique burial custom, practiced on the Delmarva Peninsula,[1] have recently come to light. This practice involved preliminary treatment of the remains by bone-scraping and mummification and temporary incarceration in a temple or bone house and, secondarily, the use of an ossuary dug in the earth for the final and permanent disposal of the skeletons. The practice is reported on the Virginia and Maryland mainland and in the Carolinas by early writers.[2] MacLeod has written a comprehensive account of the complex, and Willoughby discusses it in a paper on the Virginia Indians.[3] From the viewpoint of archaeology, Bushnell[4] and Stewart[5] have made leading contributions in recording locations and excavations of ossuaries.

Davidson summarizes the custom as follows:[6]

> In Virginia the practice consisted of mummification of the bodies of the chiefs whoever this term may include, whereby following disembowelment, the skin was slit up the back and removed, the flesh cut from the bones by priest-officials and dried, and the skin replaced and packed with sand to enclose the skeleton sometimes wrapped in skins and still articulated by the uncut ligaments. The remains, finally wrapped in fine, white dressed skins and rolled in mats were then laid away in a mortuary temple beside the mummies of the previously deceased. The dried flesh and the riches of each were placed at the feet or nearby. Eventually the remains were disposed of in burial ossuaries.

There are indications that a similar ritual, varying in details, was in use by the Assateague, Pocomoke, Choptank and Nanticoke on the Delmarva Peninsula. Heckewelder's observation that the Nanticoke moving north into Pennsylvania carried the scraped bones of their dead through Bethlehem[7] is pertinent. Another missionary, Ziesberger, relates that the Nanticoke scraped the flesh from the bones of their dead and reinterred the remains.[8] Brinton[9] also states that the Nanticoke scraped the bones of their dead and transported the bones when they moved north.

---

[1] The Delmarva Peninsula, bounded on the west by Chesapeake Bay and on the east by Delaware Bay, contains the entire state of Delaware and parts of Maryland and Virginia.

[2] The following early writers are most frequently cited and because of their familiarity they are not included in the author's references: Hariot (1585), Smith (1608), Strachey (1612), Beverly (1702), Lawson (1709).

[3] MacLeod, 1928; Willoughby, 1907, p. 62. [4] Bushnell, 1920 and 1940.

[5] Stewart, 1937, 1940*a*, and 1940*b*; Stewart and Wedel, 1940.

[6] Davidson, 1935, p. 85. [7] Heckewelder, 1876.

[8] Zeisberger, 1779. [9] Brinton, 1885, p. 23.

Bozman says that during his boyhood he was told that the Choptank Indians kept the remains of their dead chiefs and great men in a mortuary temple called a "Quioccason House."[10] Further evidence appears in a letter written by William Vans Murray to Thomas Jefferson in 1792 wherein he states that a Choptank band preserved the remains of their chief Wynicaco for seventy years in a "Chiacason House."[11]

This term Chiacason also appears in the earliest land records on the peninsula. Marye, after searching the deeds, found a place on the south side of Nanticoke River called "Quiankeson Neck" and the land described as "beginning at a marked pine by a swamp near Indian Quiankeson Houses."[12] He also locates a marsh on Choptank River called "Cuiackason Swamp" and, on Nassawango Creek, a branch of Pocomoke River, a place called "Quacotion House Point."[13] The latter was near the town of Askiminakonson, habitat of the Pocomoke Indians. Nearby lived the Assateague whose Emperor once complained to the Maryland authorities that a white man had stolen the riches laid away beside one of their dead kings. The thief "hath most injuriously and feloniously stolen and taken away great quantitys of roanoake and skinns from the tomb of some of their former kings which (according to their custom) they used to offer there." It is also recorded that three Indians from the Nanticoke town on Nanticoke River once complained that the whites had robbed their "Quankosine House."[14] The implication from both episodes is that the kings and great men went to their resting places with abundant grave goods, but that the commoners did not.

The term Chiacason was not only used by Algonkians, but it was found among the Nottoway Indians, an Iroquois-speaking people of Virginia who had "Quiocason Houses."[15] Yarrow also cites the word as "Quigozon" meaning a charnel house.[16] An early writer, Lawson, called the Carolina burial temples "Quiocasons."[17]

The survival of corruptions of the word Chiacason, as a place name in the land records on the Delmarva Peninsula is, in my opinion, an indication of the geographic distribution of the burial complex with which the temples are associated. Moreover, it will be seen that archaeology supports this assumption.

The basic complex of bone-scraping and reburial in ossuaries is of southern derivation and had been institutionalized among the Choctaw,

[10] Bozman, 1837, fn., p. 173. [11] For copy of this letter see Speck, 1927, p. 41.
[12] Marye, 1936, p. 43. [13] Marye, 1937*b*.
[14] Maryland Archives, Vol. 5, pp. 480–483; *ibid*., Vol. 29, p. 229.
[15] Marye, 1937*b*. p. 210. [16] Yarrow, 1879, p. 94.
[17] MacLeod, 1928, p. 209; Willoughby, 1907, p. 62.

Natchez, Chickasaw, Creek, Seminole and others. Some of these tribes erected mounds over their ossuaries and others were known to transport the bones of their dead when they removed to a new village site.[18] These similarities to mortuary customs in Virginia, Maryland, and Delaware leads one to suppose that the custom had diffused northward. How far up the Delmarva Peninsula it spread is not known, but MacLeod believes that it had reached the southern margin of the Pennsylvania Lenape. He allows for locally evolved variations as the trait diffused north.[19] Flannery also agrees that the practice is of southeastern origin.[20]

Turning to ethnology, Speck[21] and Harrington[22] both learned from Delaware informants of a burial custom practiced by the Oklahoma Delaware before 1860, called the Skeleton Dance. The Delaware claimed they had borrowed it from the Nanticoke. As part of the ceremony, the flesh was stripped from the bones of the deceased and buried. The bones were then dried at some private place. At the end of twelve days, the skeleton was wrapped in white buckskin and taken to a place prepared for a ceremonial dance. A ritual followed and, finally, the skeleton was reburied. At this reburial, it was believed that the soul had been permanently dismissed from the body. Unquestionably, this ceremony was a survival of earlier bone-scraping, temporary temple burial, and final ossuary interment rites.

In presenting recent data from the Delmarva Peninsula, I shall first quote a newly discovered reference to an ossuary and a ceremony associated with its use:[23]

> The last of the Nanticokes in Delaware took their departure about 1748 from the neighborhood of Laurel in Sussex County. The bones with which Mr. Heckewelder saw the Indians loaded were only the remains of their chiefs; as long since the time he speaks an occurrence happened near the town of Laurel which goes to prove that most of the bones of their tribe were left behind and buried altogether at one place.
>
> About thirty years since, some persons engaged in digging earth from a bank near a small stream within a mile from Laurel for the purpose of repairing a mill dam came suddenly and unexpectedly upon an ancient Indian burying ground. They dug up several wagon loads of bones and left a large quantity still remaining in the earth. The skeletons, it was said, wore [sic] laid side by side and each bone in its proper place. Among them were several frames which must have belonged to men of large growth. One in particular was said to have measured seven feet in length.
>
> There lived at that time in the neighborhood several very old men who well recollected the Indians before they took their departure for the west. The account they gave of this burying ground was that a short time before the last of the Indians left that part of the country, they all assembled at this spot and that they brought with them the

[18] Bushnell, 1920, pp. 93–116. [19] *Ibid.*, p. 212. [20] Flannery, 1939.
[21] Speck, 1937, p. 142. [22] Harrington, 1921, p. 183.
[23] Huffington, 1838, p. 16.

bones of the dead and buried them there with many ceremonies peculiar to themselves. At the time it was discovered, large trees had grown over this Indian cemetery.

In 1933, Wigglesworth reported having uncovered a large burial pit below Rehoboth, Delaware, containing the disarticulated remains of fifteen individuals. Apparently nothing had been buried with the remains.[24] Davidson reported disarticulated remains in a group burial at Slaughter Creek, Delaware, suggestive of an ossuary. There were no grave accompaniments.[25]

In 1938, a state highway crew encountered an ossuary near Killens' Mill Pond, east of Felton, Delaware. Many skeletons were removed, but no data taken. Unlike the other ossuaries mentioned, this one contained many artifacts and red ochre. The writer inspected some of this material, notably large blades and spearheads of Ohio flint; slate gorgets of various types; stone tubes (not the blocked end type); and miscellaneous arrowheads of local quartz, quartzite and jasper.

While foundations for a jail in Cambridge, Maryland, were being laid in 1883, an ossuary containing sixteen skeletons was uncovered. The bodies were said to have been seated in a circle. There seem to have been no grave goods.[26]

Recently, I located the site of an ossuary on a farm owned by Robert Vincent on the east bank of Whitehall Creek, at its junction with the Choptank River. Data, which need not now detain us, indicate that this is the site of a former Choptank village called Transquakines or King Ababco's Town.[27] The ossuary was probably part of this village. Subsequent investigation revealed that Stewart had visited this ossuary in 1936 and found it badly mutilated by curiosity seekers. Nevertheless, he obtained some of the bones which had seemingly been disarticulated before burial. There seem to have been no grave goods.[28]

The best known reference to the burial custom under discussion was made by Mercer who excavated two contiguous ossuaries at Sandy

---

[24] Wigglesworth, 1933. [25] Davidson, 1935.

[26] MacLeod, 1928, p. 208, quoting Reynolds.

[27] For historical allusions to this site see Marye, 1937*a*.

[28] In a brief footnote, Stewart (1940*a*, p. 363) mentions this ossuary although I did not see the reference until my return from Cambridge and after he had kindly sent me a copy of the monograph in which it appears. Our exchange of correspondence revealed that he had recovered eight skulls and miscellaneous bones. Only four of these skulls were measurable, and I am indebted to Stewart for giving me their indices as follows: 71.3; 74.9; 78.8; and 82.3. The range is thus from dolichocrany to brachycrany. This checks with measurements made upon crania excavated by Mercer whose average was 75.1; see Cope, 1897. One fragment of tibia removed by Stewart showed extensive osteitis which may have been caused by syphilis. This disease was definitely indicated in the remains uncovered by Mercer; see Harte, 1897.

Point near Cambridge, Maryland. He uncovered the disarticulated remains of not less than 100 individuals. He states that the site had been previously worked by representatives of John Hopkins and the Bureau of American Ethnology.[29] Also, the erudite Holmes had visited it.[30] In 1889, Dr. J. L. Dawson, of Cambridge, excavated on the site and among other things unearthed an ancient canoe paddle reputed to be of aboriginal manufacture.[31] During the past fifty years, other unrecorded digging has been carried on at Sandy Point.

A few years ago, the owners of the property erected a sea wall to halt the destructive effects of the waves. During digging operations, the workmen encountered a third ossuary near the scars of Mercer's earlier dig, not previously disturbed. Artifacts in great number were unearthed, and many of them went into a concrete mixer along with the sand surrounding them. Fortunately, a large number of specimens were salvaged. After the wall was completed, a small part of the ossuary remained undisturbed. Local enthusiasts who had obtained some of the specimens from the workmen set to work with their picks and shovels to obtain more. No scientific agency was consulted, and members of the Archaeological Society of Delaware knew nothing of the episode. Having since personally inspected the material and carefully checked all the sources of information, I can say unreservedly that it represents, to the best of my knowledge, one of the most significant discoveries ever made in the Chesapeake region, one which clarifies some of the problems of Delmarva archaeology.

More than 100 complete gorgets were salvaged. Many more were doubtless lost in the construction of the sea wall. They were larger and more varied in shape than the gorgets usually found in this area. Some were of banded slate, a rarity on the peninsula. They were perforated with from one to five holes. Some were unperforated, yet otherwise complete even to serrated edges. There were at least ten stone tubes. These, too, are rarities on the peninsula. There were eight so-called paint pots of green steatite, each the shape and size of half a lemon. There were a number of small slate pestles which presumably were used to grind the paint pigment in the little mortars. The most spectacular objects were the spearheads or blades made of the distinctive chalcedony from Flint Ridge in Ohio. There were at least fifty, the largest exceeding ten inches. More than 125 cylindrical copper beads were preserved. Hundreds must have been lost. One large rectangular plate of copper, six inches long, perforated with a single center hole, was also recovered. The finest single specimen was a snake effigy pipe made of green steatite. F. M.

[29] Mercer, 1897. [30] *Ibid.*, pp. 92 and 93. [31] Jordan, 1906.

Setzler, who saw a sketch of this pipe, writes me that it is of the type associated with the Copena complex. Miscellaneous material included a birdstone, a boatstone, fossil shark's teeth, hematite paint stones and chunks of ochre. Quartz and jasper arrowheads and potsherds of the type found commonly throughout the southern portion of the peninsula were also found *in association with the exotic materials*.

Careful interrogation of the diggers revealed that with each skeleton —and the number of skeletons was unknown—grave goods were found abundantly. Each skeleton seems also to have been covered with ochre. No photographs were taken and no skeletal remains were preserved or measured. It is most regrettable that this highly important feature could not have received scientific attention, but the investigators of the past century whose efforts were obviously superficial are not blameless. Mercer's conclusions are now no longer valid and must be carefully re-examined in light of the newer data from the site.[32]

The data lead one to the opinion that these remains were those of "kings" and "great men" buried with their finest possessions after they had lain temporarily in a Chiacason House. It is also reasonable to assume that the two nearby ossuaries uncovered by Mercer contained bodies of commoners, interred without grave goods; and that a burial of commoners was represented at the Laurel ossuary, the Rehoboth ossuary, the ossuary on the Vincent farm, and the nested burials at Slaughter Creek, all of which contained no grave goods.

Conversely, the similarity between the tubes, gorgets and Flint Ridge spearpoints found at Cambridge, and those at Killens' Mill Pond, indicates a strong relationship. This same combination has occurred at least once in northern Delaware where a stone tube, gorget and two large spearpoints of Ohio flint were uncovered near Wilmington years ago.[33] Moreover, a find made near Parksley in the southern extremity of the peninsula, when a pine tree was uprooted in a storm, pictures a stone tube and spearheads of "straw-colored chalcedony."[34]

The archaeological sites on the Delmarva Peninsula are essentially Coastal in provenience, and following Ritchie's earlier identification, this has been described as the Coastal aspect of the Northeastern phase of the Woodland pattern, foci yet unnamed. Traits in this horizon as represented on the Delmarva Peninsula include the following:

Stemmed and equilateral triangular arrowpoints of pebble material; grooved axe; small celt; small gorgets of native slate; thumb-nail scrapers; steatite bowls; bannerstones;

[32] See the Appendix for an inventory of the material found in the ossuary.

[33] These specimens may be seen in the Banning Cabinet at the University of Delaware Archaeological Museum.

[34] I am indebted to Archibald Crozier for acquainting me with this reference.

bone awls; bone gorgets; flat perforated bone bodkins and antler tine arrowpoints. (The lithic complex is fully developed and bone is of less importance.)

Pottery vessels are cord-marked on the exterior, frequently by nets. The vessels are often rimless, although slight rims are frequently present. The bottoms are conoidal and the incisings, when present, are found near the rim and consist of parallel bands, chevrons, triangles or straight line markings. Punctate and pointille designs are rare; circular designs or likenesses to man or animal are completely absent. The vessels are generally tempered with shell fragments, but sand and quartz fragments are also used. Pipes are very scarce, and the few known specimens are of clay.[35]

Some of these traits are found in the newly defined Red Valley focus (early) of the Coastal aspect as recognized by Cross in New Jersey.[36] However, work on the Delmarva Peninsula is still of such a limited nature that findings cannot yet be correlated with those in New Jersey, although a similarity is admitted.

The tubes, gorgets, Ohio flint spear points, shark teeth, copper beads, birdstone, boatstone, and hematite paint stone constitute exotic elements in the Coastal aspect. It is important, as I have pointed out, that these traits as observed do not occur alone, but are interfused with some of the coastal traits listed above. It would appear, therefore, that the inhabitants of the Delmarva Peninsula were under a strong influence which had carried to them the Chiacason House and bone-scraping rites, reburial in ossuaries, and exotic material culture traits of which the stone tube and spear points of Ohio flint seem to be diagnostic. The tubes are not the blocked end type of the Adena horizon, but have open ends.[37]

The Point Peninsula focus, identified by Ritchie and with marked elements of the Intrusive Mound culture of Mills, has some traits which are strikingly similar to the exotic traits found on the Delmarva Peninsula and discussed here: principally, ossuary burial, open end stone tube, gorget, birdstone, shark tooth, cylindrical copper bead and hematite paint stones.[38] In New York, these traits are interfused with traits of the Vine Valley aspect, and of the manifestation, Ritchie says: "The writer agrees with Parker and Willoughby as to its basic western derivation and believes that it became subsequently intermixed with the previously mentioned earlier culture influx from the southeast."[39]

In conclusion, we feel justified in postulating at least two foci for the Coastal aspect as represented on the Delmarva Peninsula, although it would be premature to attempt to define them except in a very broad way. One of these, the earlier, is characterized by single flexed burials, as Davidson has already observed[40] and cultural traits of a basic coastal

[35] For a preliminary discussion of the Coastal aspect, see Weslager, 1939.
[36] Cross, 1941. [37] Greenman, 1932; Setzler, 1940.
[38] Ritchie, 1937. [39] *Ibid.*, p. 193. [40] Davidson, 1935.

provenience, some of which have been enumerated. The second, or later focus, reveals an exotic influence, probably from the southwest, bringing new burial customs and foreign, material culture elements.

APPENDIX

Roy Travers, Claude Trueax, and Ralph Jackson, all of Cambridge, acquired the majority of the Sandy Hook specimens either by purchase from the workmen or as a result of their own digging. On a visit in September, 1941, I inspected the specimens in the possession of Mr. Jackson and Mr. Trueax, and discussed the site with them and Mr. Travers. All three were most cooperative in imparting information. At that time, I did not see Mr. Travers' material inasmuch as he had previously sold his collection to Collins B. Allen of Salem, New Jersey.

In October, 1941, I visited Mr. Allen at his home where he and Mrs. Allen accorded me every kindness. James Scott, a member of the Archaeological Society of Delaware, accompanied me on this visit and took a number of photographs of the specimens.

I am listing below a reasonably accurate inventory of the specimens which I observed in the three collections. My notes are not very clear on the quantity of certain of the objects which explains the use of the word "several" or "approximately."

Claude Trueax, Cambridge, Maryland: stone effigy pipe; approximately 25 cylindrical copper beads; 18 gorgets, 2 of which were unperforated; 5 large flint spearheads; 2 paint pots; 2 paint pestles; several hematite squares; and 2 stone tubes.

Ralph Jackson, Cambridge, Maryland: 31 gorgets, 6 of which were unperforated; 100 (approximately) cylindrical copper beads; 4 stone tubes; 3 paint pots; slate pestles (number unknown); several large flint spears; and several white quartz blades and arrowheads.

Collins B. Allen, Salem, New Jersey (material purchased from Roy Travers): 19 white quartz blades; 50 gorgets (ten were unperforated; one had four holes; seven had three holes; remainder had two or one hole; largest gorget was $9\frac{1}{4}'' \times 3\frac{1}{4}''$, unperforated, but serrated around the edges; six gorgets were of banded slate; one gorget had been broken through the center and repaired with six mending holes); 1 birdstone; 1 boatstone; 3 hematite squares; 3 paint pots; 5 slate pestles; a few copper beads; 1 piece of copper approximately 6″ square, perforated with one hole; 15 large spearheads of Ohio flint (largest $10\frac{3}{4}''$ long); 8 (approximately) large flint blades (knives?); 2 wing-shaped problematicals, not perforated; and 5 stone tubes (one 6″ long; two $4\frac{1}{2}''$; one 3″; one 4″).

BIBLIOGRAPHY

BOZMAN, J. L.
1837. *A History of Maryland.* Baltimore.

BRINTON, D. G.
1885. *The Lenape and Their Legends.* Philadelphia.

BUSHNELL, DAVID I., JR.
1920. *Native Cemeteries and Forms of Burial East of the Mississippi.* Bureau of American Ethnology, Bulletin 71. Washington.
1940. "Virginia Before Jamestown." In *Essays in Historical Anthropology of North America*, Smithsonian Miscellaneous Collections, Vol. 100, pp. 125–158.

COPE, E. D.
1897. "Physical Characteristics of the Skeletons Found in the Indian Ossuary on the Choptank Estuary." *Publications of the University of Pennsylvania in Philology, Literature and Archaeology*, Vol. 6, p. 98 ff.

CROSS, DOROTHY
1941. *Archaeology of New Jersey*, Vol. 1. Trenton.

DAVIDSON, D. S.
1935. "Burial Customs on the Delmarva Peninsula and the Question of Their Chronology." AMERICAN ANTIQUITY, Vol. 1, pp. 84–97.

FLANNERY, REGINA
1939. *An Analysis of Coastal Algonkian Culture*. Catholic University, Washington.

GREENMAN, E. F.
1932. "An Analysis of the Adena Culture." *Ohio Archaeological and Historical Quarterly*, Vol. 41, No. 3.

HARRINGTON, M. R.
1921. *Religion and Ceremony of the Lenape*. Museum of the American Indian, Heye Foundation, Indian Notes and Monographs.

HECKEWELDER, JOHN
1876. *An Account of the History, Manners, etc.* Historical Society of Pennsylvania, Memoirs. Philadelphia.

HUFFINGTON, WILLIAM
1838. *The Delaware Register*. Dover.

HARTE, R. H.
1897. "Traces of Disease in the Human Remains Found in An Indian Ossuary on the Choptank Estuary." *Publications of the University of Pennsylvania in Philology, Literature and Archaeology*, Vol. 6.

JORDAN, FRANCIS, JR.
1906. *Aboriginal Fishing Stations on the Coast of the Middle Atlantic States*. Philadelphia.

MACLEOD, W. C.
1928. "Priests, Temples and the Practice of Mummification, etc." *International Congress of Americanists*, 22nd Session, pp. 207–230.

MARYE, WILLIAM B.
1936. "Former Indian Sites in Maryland as Located by Early Colonial Records." AMERICAN ANTIQUITY, Vol. 2, pp. 40–46.
1937*a*. *The Choptank Indians*. Bulletin, Archaeological Society of Delaware, Vol. 2, No. 5.
1937*b*. "Burial Methods in Maryland and Adjacent States." AMERICAN ANTIQUITY, Vol. 2, pp. 209–214.

MERCER, HENRY C.
1897. "Explorations of an Indian Ossuary on the Choptank River, Dorchester County, Maryland." *Publications of the University of Pennsylvania in Philology, Literature and Archaeology*, Vol. 6.

MOORE, J. E.
1920. In "On the Lookout." *The American Collector*, September. Waco, Texas.

RITCHIE, WILLIAM A.
1937. "Culture Influences from Ohio in New York Archaeology." AMERICAN ANTIQUITY, Vol. 2, pp. 182–194.

SETZLER, F. M.
1940. "Archaeological Perspectives in the Northern Mississippi Valley." In *Essays in Historical Anthropology of North America*, Smithsonian Miscellaneous Collections, Vol. 100, pp. 253–287.

SPECK, FRANK G.

1927. *The Nanticoke and Conoy Indians.* Historical Society of Delaware. Wilmington.

1937. *Oklahoma Delaware Ceremonies, Feasts and Dances.* Memoirs American Philosophical Society. Philadelphia.

STEWART, T. D.

1937. "The Findings of Two Ossuaries on the Site of the Indian Village of Nacotchtanke." *Journal, Washington Academy of Sciences,* Vol. 27, pp. 213–219.

1940*a*. "An Ossuary on the Indian Village Site of Patawomeke." *Explorations and Field Work of the Smithsonian Institution,* pp. 67–70.

1940*b*. "A Report on the Skeletal Remains." In A. L. FERGUSON, "An Ossuary near Piscataway Creek." AMERICAN ANTIQUITY, Vol. 6, pp. 4–18.

STEWART, T. D., AND W. R. WEDEL

1940. "The Finding of an Indian Ossuary on the York River in Virginia." *Journal, Washington Academy of Sciences,* Vol. 30, pp. 356–364.

WESLAGER, C. A.

1939. "Coastal Aspect of the Woodland Pattern as Represented in Delaware." *Archaeological Society of Delaware,* Paper 1.

WIGGLESWORTH, JOSEPH

1933. "Excavations at Rehoboth," *Bulletin, Archaeological Society of Delaware,* Vol. 1, pp. 2–6.

WILLOUGHBY, CHARLES

1907. "The Virginia Indians." *American Anthropologist,* n. s., Vol. 9, No. 1.

YARROW, H. C.

1879. *Study of the Mortuary Customs of the North America Indians.* First Annual Report, Bureau of American Ethnology, pp. 89–203. Washington.

ZEISBERGER, DAVID

1779. *History of the North American Indians.* Trans. by the Ohio Archaeological and Historical Society, 1910.

Museum of Archaeology
University of Delaware
Newark, Delaware
December, 1941

AN ARCHAEOLOGICAL RECONNAISSANCE OF NORTHEASTERN BAJA CALIFORNIA AND SOUTHEASTERN CALIFORNIA[1]

ADAN E. TREGANZA

THIS paper deals with the archaeology of the northeastern region of Lower California and the southeastern portion of California. Evidence derived from these aboriginal remains indicates two possible cultural horizons, late prehistoric Yuman pottery making groups and an earlier non-ceramic group.

Most of the data have been derived from Baja California,[2] because the area north of the International Boundary line has been so severely pot-hunted that sites fail to yield data in sufficient quantities for analysis. The area covered in this report comprises some nine hundred square miles, bounded by the Coast or Peninsular Ranges, the Superstition Mountains, and the Sierra de los Cocopas, and including the southwestern part of Imperial Valley and the northern half of Laguna Salada in Baja California.

Since pottery manufacture in southern California has been thought to be a local, elaborated result of influence from the Southwest, any evidence bearing upon this theory is important.

The pottery making peoples of our area fall into the category of hunters and gatherers, with emphasis on gathering. Society, as it existed under these arid and semi-arid conditions, was governed by a seasonal migration resulting from an economy dependent entirely upon natural resources. The problem of subsistence was the prime factor dominating the development of the material culture.

Topographic conditions limited the possible locations of camp sites. The most likely places were selected for examination, then worked intensively on foot. All sites were recorded, and surface collections were made. Every canyon leading into the mountains was followed out to its head, and the rocky promontories along the way were searched for pottery caches. Sites in the mesquite sand dune area were often reworked after every storm, for the shifting sands expose cremations and artifacts. No extensive excavations were justified.

Geographically, there are three zones in the area: a mountain zone with a piñon and oak vegetational covering; a transitional zone or desert-steppe land formed by the eastern escarpment of the Coast

[1] The author extends appreciation to his parents, Mr. and Mrs. A. O. Treganza, his wife, Mrs. A. E. Treganza, Mr. H. Sharp, and to members of the Department of Anthropology of the University of California, for their assistance in the preparation of this manuscript.

[2] Kniffen, 1931.

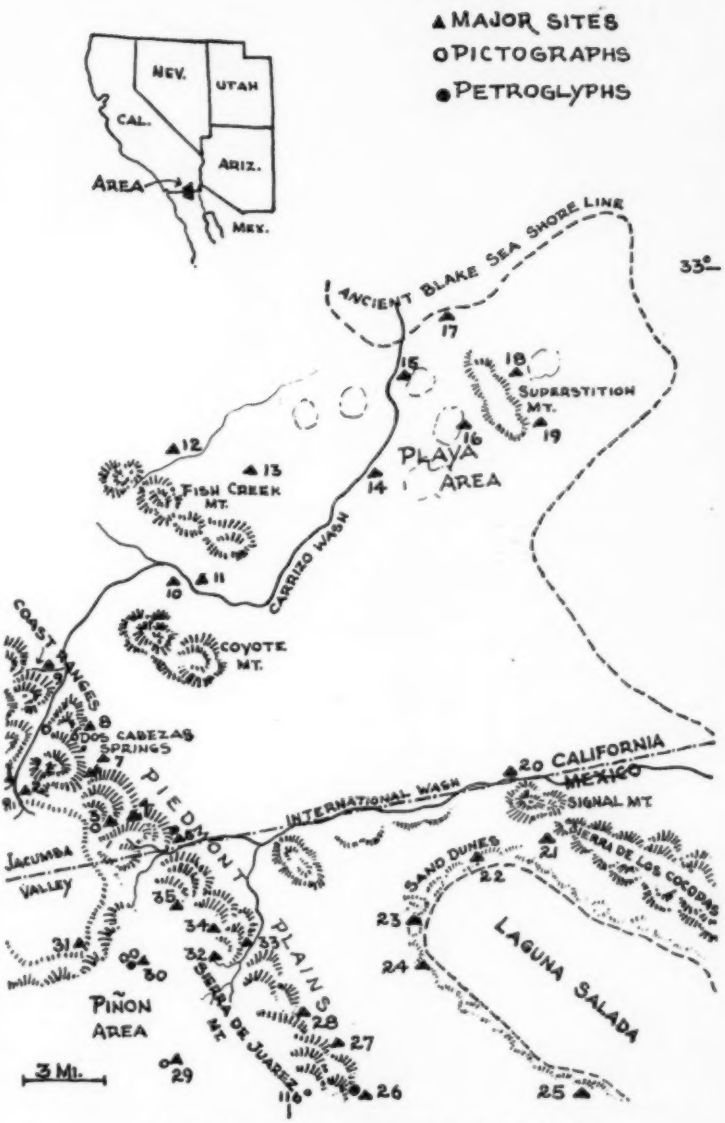


FIG. 8.—Map showing approximate location of sites in relation to physiographic features.

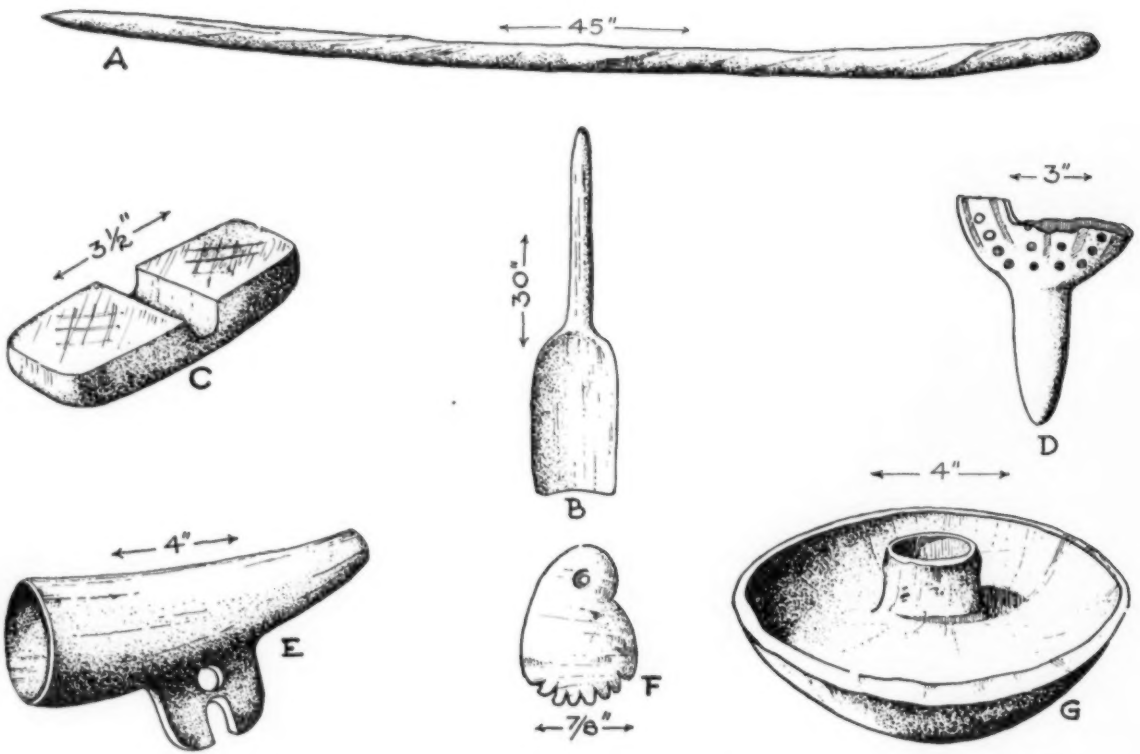


FIG. 9.—Miscellaneous artifacts from pottery bearing sites, California and Baja California. *A*, mescal chisel; *B*, mescal shovel; *C*, arrow straightener; *D*, fragment of painted pottery rattle; *E*, clay pipe; *F*, shell ornament; and *G*, clay pottery anvil.

Ranges and characterized by mescal (agave) on the hill sides and mesquite in the washes; and a true Colorado desert zone of "smoke trees," creosote bush and mesquite, as found in Imperial Valley. Laguna Salada was once the extension of the Gulf of California, but deposition of silt by the Colorado River plus uplift of the land have shut off the connection with the Gulf Waters. Today, the lake stands as a vast barren alkali flat surrounded by an extensive mesquite sand dune area. The drainage to the west falls toward the Pacific Ocean. On the east, the area north of the International Boundary line drains into the Salton Sink;[3] south of the line, the drainage is into Laguna Salada and the Gulf of California.

The area was occupied ethnographically by three Yuman groups and is bounded on the south by a fourth. The region was divided among them as follows: the mountain portion in the Sierra de Juarez and the Coast Ranges is in the territory of the Southern (Eastern) Diegueño; the desert portion is almost entirely in the Kamia[4] (Desert Diegueño)[5] district with the exception of the eastern margin which is held by the Cocopa;[6] to the south, in the vicinity of San Felipe, lies the country of the Kiliwa.[7] The boundaries of these groups were not definite lines of demarcation, since natural barriers, such as rivers and mountains, have not hindered the overlapping of culture traits.

Tribes in the immediately adjoining area are the Northern (Western) Diegueño, whose boundary extends to the Pacific Ocean in San Diego County; Cahuilla in the north; and, along the Colorado River to the northeast, the Yuma, Chemehuevi, and Mohave. All of these tribes are Yuman speaking with the exception of the Cahuilla and Chemehuevi, who speak a Shoshonean dialect.

It would be difficult to say where boundaries were in ancient eras but it would probably be safe to assume that in late prehistoric times, the boundaries were much the same as those recorded in 1770.[8]

SITES

Sites indicate a food gathering population moving seasonally between two major zones connected by trails which are well marked by stones and which lead from the desert floor to the higher mountain slopes via canyons cutting the foothills. Lining the trails may be found occasional sherds from a broken pot or the ashes of a single night's fire, but, at the most, these show minimum evidence of occupation. At the other end of the scale are found what are here designated as major sites,

[3] Clapp, 1907. [4] Gifford, 1931, pp. 1–3. [5] Drucker, 1937, p. 5.
[6] Gifford, 1933. [7] Meigs, 1939. [8] University of California, Map No. 11.

either concentrated habitation or camp areas or material scattered over as much as a square mile of surface.

Generally speaking, major sites are characterized by an abundance of pottery sherds, stone chips, flake cores, bedrock mortars, manos and metates, and burnt bone and ash. In most cases, the location of the site is determined by the presence of permanent water and availability of food. All sites, with the exception of a few occurring in the mountains, are of a surface nature. Nowhere, as yet, has anything resembling a stratified site been found; even the deposits in the mountains merely possess a depth of about two feet.

Mountain Sites.[9] Mountain sites conform fairly well to one general pattern occuring in most cases on a well drained flat or plateau or on a high sandy creek terrace. In the main, large granite outcroppings, in the form of weathered boulders, are either directly associated with the site or adjacent to it. No evidence of house structure has been found; this does not imply that at the time of occupancy none existed, but rather, that the nature of the construction was so light that evidence has not been preserved. The practice of burning the dwelling upon death of the occupant has also acted as a destructive agent. Sites as a whole, are composed of a number of small individual camps separated by a distance of several to fifty yards. These small camp sites probably represent former house sites, as each is marked by a few scattered hearth stones, loose ashy soil, sherds, and stone flakes. Manos and metates, fragmentary or whole are generally found in association. Bedrock mortars occur if a convenient outcrop or boulder is at hand.

Cave shelters are few in number and are limited to the mountain area. The interior erosion of granite boulders produces excellent dry habitational caves. Such shelters vary from an overhanging ledge to completely protected caverns twenty feet in diameter. In most cases, right at the entrance, the roof of the caves show evidence of a sooty coating. The sand in the back end is pure disintegrated granite, whereas toward the entrance, and out in front, it is well mixed with ash, pottery sherds, and chipped stone. Such a condition suggests that the rear of the caves was used for storage or shelter and the daily activities were carried on near the entrance.[10]

In some caves, especially in small cache caves, it is not uncommon to find forked sticks propped up from the floor of the cave. Their significance is somewhat dubious. Mrs. E. Campbell[11] prefers to call them

[9] See Fig. 8, Sites 1–3, 29–32, 34, 35.

[10] Gifford (1936*a*, p. 271) reports the Northeastern Yavapai as using caves in winter for storage and living. Two fires were built in the entrance and heat circulated to the rear of the cave. [11] Campbell, 1931, p. 24.

"spirit sticks."[12] However, on occasion they have been known to support baskets and rabbit nets and I would prefer to view them as a means of isolating perishable objects from ground moisture and rodent pests.

Desert Sites. These are of three types: playa, sandy ridge or plateau, and stone circle sites. In a physiographic sense, the first two differ little from mountain sites, save that, in the main, they lack the typical granite outcrops. There is little change in the material culture, save that a new pottery type occurs, obsidian is more abundant,[13] a light, portable type metate is more common, and there are fewer storage ollas but more bowls, parching trays, and small-mouthed water bottles.

Playa sites are confined entirely to the peripheral regions of the small dry lakes, the shore line of ancient Blake Sea, and around the margins of Laguna Salada. The predominant physiographic feature is the typical desert sand dune, which may be held fast by a capping of mesquite, or constantly shifting. Camps do not conform to any one pattern in relation to the dunes, but lie scattered between them, and are easily identified by their pot sherds, which contrast sharply with the desert sand, and by hearth stones which are out of character with the surrounding material. Bedrock mortars are totally absent, due to the lack of outcroppings, but there is an abundant supply of metates, many of which are of the shallow, portable type. The source of water used by the occupants of these sites is somewhat of a problem. To the north, under somewhat similar conditions, the Cahuilla Indians[14] of the Coachella Valley are reported to have dug sub-sea level wells in the mesquite dunes. It may be that a similar means of obtaining water was employed among these playa peoples.

Sandy ridge sites are confined chiefly to the marginal desert country and occupy the high sandy ridges at the heads of the great alluvial fans where they begin to spread out into a series of long mesas. Correlated with this physiographic change is a change in vegetation. Tall ocotilla, creosote bush, cholla cactus, "smoke trees," mesquite and scattered clumps of mescal are predominant. These sites are well drained, even in the late summer cloud bursts they are subject to little flooding. A prominent archaeological feature of the surrounding country, especially up the numerous foothill canyons, is the great number of mescal pits. Such pits, generally adjacent to mescal beds, lie in the bottom of sandy washes. They are characterized by a large quanity of heat fractured stone and considerable ash.

Stone circle sites[15] are small in size, the largest not exceeding ten

[12] Gifford, 1936*a*, p. 271.

[13] The increase in the use of obsidian may be due to the close proximity of an original source, "Obsidian Butte," on the southeast side of Salton Sea.

[14] Pierce, 1939.

feet in diameter. The stones forming the circle are seldom stacked more than one tier high. The greatest number of these sites occur in Baja California.[16] They occupy the foothill terraces or flat places on the crests of the rocky ridges leading up into the mountains. Noteworthy features associated with the stone circle complex are (1) their unprotected location, (2) the total absence of pottery sherds, and (3) the presence of large porphyry flakes. No stone tools as yet have been found in association with these circles, though very crude porphyry tools are found within the area. The only signs of habitation are these few scattered flakes and a meager bit of ash within the circle.

INDUSTRIES

Shell work, textile, and wood artifacts, have been almost entirely destroyed, due to exposure on open sites and the practice of cremation on death. Material cached in dry caves, though protected from the elements, has suffered from rodents. Occasionally, a mescal fibre olla rest or fragmentary carrying net is found. A few basket fragments have been collected, all of which were coiled. Indirect evidence of this art is found in basket imprints on many of the potsherds.[17]

A few *Olivella*[18] beads with lopped spires and an occasional *Cardium* shell pendant (Fig. 9, *F*) have been recovered from cremations. Fragments of small gastropods, abalone (*Haliotis cracherodii*), and clam occur throughout the area.

Wooden objects have survived to a far greater extent due largely to the use of hard woods and the size of the objects. The most common wooden artifact is the mescal chïsel (Fig. 9, *A*), a slightly curved stick about 45 inches in length and 2 inches in diameter, wedge-shaped at one end and rounded at the other. As the name implies, it was used for prying up mescal (agave) plants, the centers of which were roasted and preserved for food. Less common, but in association with the mescal stick is a mescal shovel (Fig. 9, *B*) presumably used for digging the roasting pits. Other wooden artifacts are pottery paddles,[19] carved throwing sticks for hunting rabbits, bows, cane arrow shafts, and lizard sticks resembling a single barbed harpoon.[20]

Stone was chipped, ground, and drilled with a fair degree of skill.

---

[16] Rogers, 1939, Pls. 2 and 10.

[16] This reference to distribution refers only to the area under consideration: it is not a comparison between the total areas of California and Baja California.

[17] Rogers, 1936, Pl. 4, Fig. B.

[18] *Olivella biplicata* (Pacific Coast); *Olivella undatella* and *Olivella gracilis* (Gulf of California). [19] Rogers, 1936, Pl. 4, Fig. D.

[20] R. F. Heizer reports having seen similar specimens in collections gathered from caves along the Virgin and Colorado Rivers near Las Vegas, Nevada.

Scrapers, large crude knives, and pulping planes[21] were made by the percussion method. Pressure flaking was employed for making arrow points (Fig. 11, 7–11) and retouching various objects. Several varieties of quartz, porphyry, obsidian, and fine-grained felsite were used.

Grinding was used chiefly in the production of manos, metates, and arrow shaft straighteners. The manos and metates vary as to material used, size, and shape. The most common materials are granite, sandstone, dolomite, syenite, excoriated basalt, and mica-schist. In form, manos vary from river cobbles ground smooth on one side to symmetrically shaped stones ground on all surfaces. Metates, likewise, show this same variation and may be further divided into two types; a heavy type, too large to move; and a thin, portable type. The latter occurs more commonly on the desert playa sites, where importation was a necessity due to absence of local material. In both types, the grinding surface is either worn down into an oval depression by a circular motion of the mano or into a deep, elongated "U" trough. The first is the more common. Most arrow shaft straighteners (Fig. 9, *C*) are made of steatite and mica-schist, worked over the entire surface, and carry from one to four grooves. Sometimes, the top furface is decorated with cross hatching or parallel incised lines. Occasionally, one end is perforated for suspension.

Of less common occurrence were heating stones and pendants. The heating stones[22] are flat, pear-shaped to oval, perforated in the small end, and made mainly of steatite. Pendants vary considerably both as to material and form.

Hammerstones vary in size from a mere pebble to a half-pound stream cobble. Their distribution is universal in the area and their occurrence is quite common. Also present are abraders of sandstone, pumice, and excoriated basalt.

The pottery is a coiled, paddle-and-anvil type. It was probably fired by the open-pit method with brush and wood as fuel. A number of ceramic forms occur, varying both in size and contour. As for painted or other decorative features, they fall far short of the elaborate Pueblo types, although they do resemble some Hohokam ceramics as to form and red-on-buff painting.[23] Some of the desert wares, when compared to the Pueblo for hardness and thinness, are much their superior.

The quantity of pottery produced in this area must have been quite considerable. The fact that these people led a semi-nomadic life and did

[21] Rogers, 1939, p. 50.

[22] A cache of five of these pear shaped stones was discovered in 1938 directly back of a steatite deposit in Jacumba Valley. None indicated use, and evidently they had been deposited there just after their manufacture. [23] Amsden, 1936.

not concentrate in any one spot caused a wide dispersal of pottery sherds. Rogers, of the San Diego Museum, says: "In certain parts of the Yuman area, such as the western margins of the Colorado Desert, the per capita production of pottery at any one time was equal to that of the Puebloan. Because of the mortuary customs of the latter, quantities of their pottery have been preserved in graves awaiting the spade of the archaeologist and the curio-hunter; while Yuman sacrificial practices attendant to death have prohibited the preservation of their pottery."[24]

Ceramics may well be divided into two major types; mountain ware and desert ware. The latter is the most varied both as to form and material. In general, mountain ware was made from ground residual clays[25] containing varied amounts of mica (muscovite) to such extent that the finished product might aptly be termed micaceous ware. The texture is quite coarse and contains inclusions as large as a match head; the thickness varies from $\frac{1}{4}$ to $\frac{3}{4}$ of an inch. No attempt was made to polish the surface. Temper was limited to coarse sand and gravel, perhaps mica, no shell or vegetable matter was used. The colors vary from muddy brown to brick red. Firing, being uncontrolled, often produced both an oxidizing and a reducing action on the pottery, thus leaving the surface spotted with irregular carbon smudges.

Decoration was by two methods, incising and painting, neither of which are very common, Incised designs were mainly on rims or near the neck: punctations, straight or zig-zag lines. Painting was done with a red pigment (probably hematite) and, like the incising, was limited to simple design elements of dots, straight lines, zigzags, half moons, and plain and concentric circles (Fig. 10, *B*, 1). In some cases, the application of pigment shows a fair degree of skill, in others, carelessness.

Mountain caves yield globular cooking pots (Fig. 10, *C*, 2–4), bowls of various sizes and shapes (Fig. 10, *D*, 2–3), shallow parching trays (Fig. 10, *E*), small elongated scoops, constricted necked water ollas (Fig. 10, *B*, 3–5), and large storage ollas (Fig. 10, *A*, 1–4).[26] Desert ceramics are much the same, save that there is more elaboration in bowl forms;[27] water ollas are smaller, with elongated, constricted necks; and there are fewer storage ollas.

Desert wares appear to be primarily composed of a fine, sedimentary clay containing a limited amount of mica and a few inclusions. The fired vessels are light red to pink, but often, due to a high content of

[24] Rogers, 1936, p. 2. [25] *Ibid.*, p. 4.

[26] Rogers (1936) reports ollas with a maximum height of thirty-three inches and a capacity of twenty-seven gallons.

[27] Many of the cooking bowls and pots have a stucco-like coat applied to the bottom of the pot (see Rogers, 1936, p. 51, Fig. A) to prevent cracking while in use over a fire.

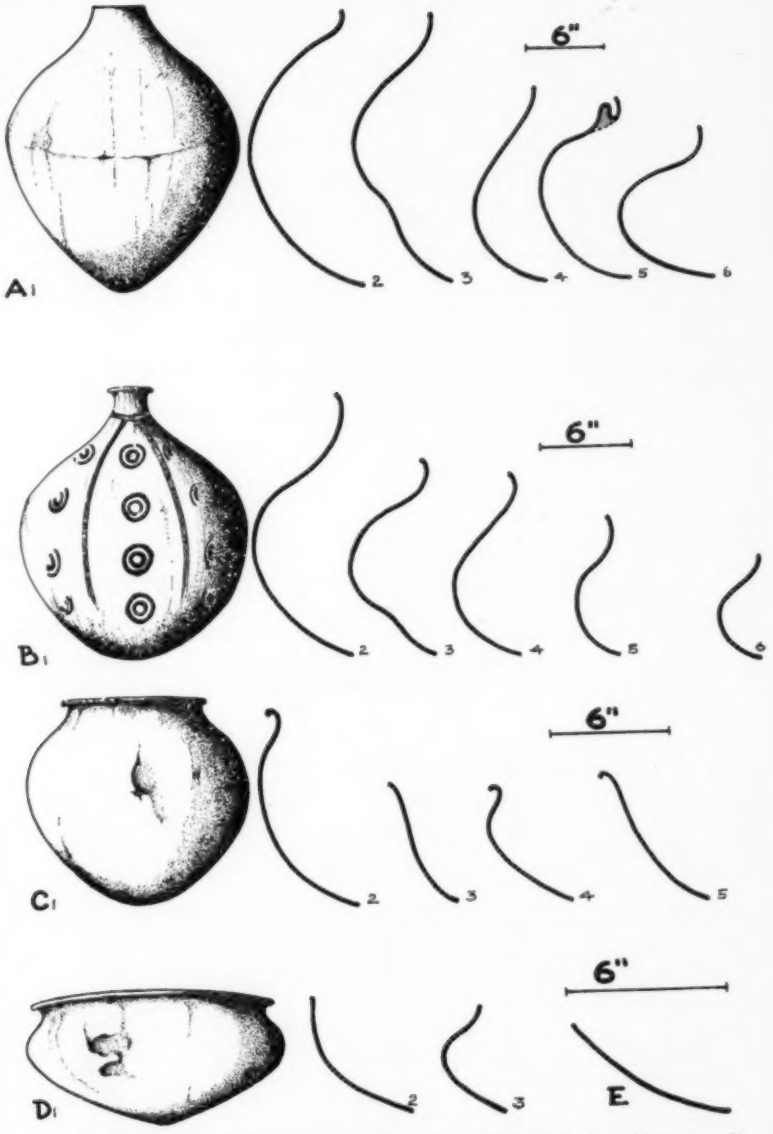


FIG. 10.—Pottery types. *A*, storage ollas; *B*, water bottles; *C*, cooking pots; *D*, bowls; and *E*, parching trays. Desert wares: *A*, 5 and 6; *B*, 1, 2 and 6; *C*, 1 and 5; *D*, 1 and 2. Mountain wares: *A*, 1–4; *B*, 3–5; *C*, 2–4; *D*, 3; and *E*.

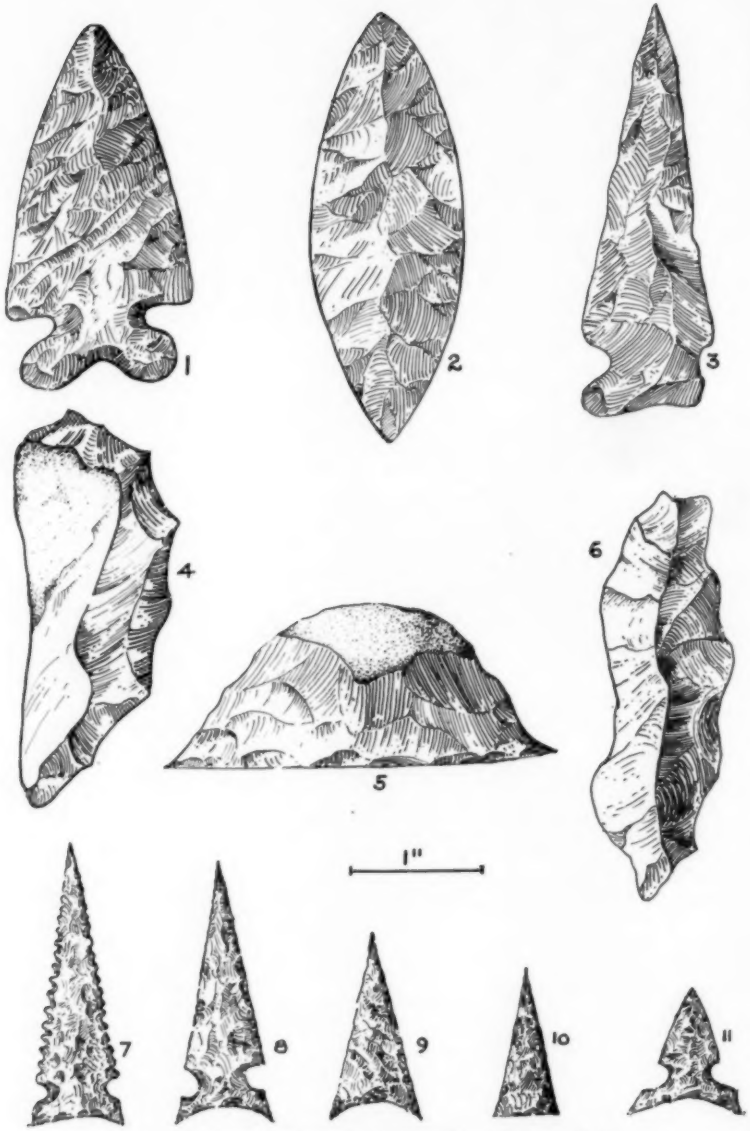


FIG. 11.—Stone implements. 1–6, San Dieguito types; 7–11, types from pottery bearing sites.

gypsum and other salts in the clay, the pottery surface is a light buff to a pale yellow, much resembling a slip coat;[28] however, along the piedmont plains on sandy ridge sites, it is not uncommon to find cooking vessels made of a micaceous residual clay like that found in the mountains. This similarity is either the result of importation from the mountains or a parallel in clay composition. Painting is more abundant on desert pottery, especially on food bowls and water ollas, and is a true red-on-buff. In one instance, black-on-buff[29] occurred on a small water olla; the pigment used was probably mesquite gum. Incising and punctation is quite common on bowl rims.

Pottery on the playa sites differs somewhat from that on the sandy ridge sites. It is almost entirely of sedimentary clay. Texture varies from fine, even grained wares, to wares with coarse inclusions. Straight rimmed bowls and parching trays are predominant forms. No painting has been observed. Decoration is effected mainly through rim incising. Another decoration, quite rare, and seemingly confined to the playa sites, is produced by rolling bits of clay into small balls and pressing them on the surface just below the rim.

In both desert and mountain pottery, attempts were made to patch damaged pottery, by a variety of methods: filling a crack with piñon or mesquite gum, pasting the surface over with damp clay, cementing on a sherd over a hole, and drilling two holes on each side of a crack and tying the adjoining pieces with mescal fiber twine.

Occasionally, multiple mouthed pots, or bowls with handles or lugs occur. The author feels that these may be late introductions stimulated by Caucasian contact since the type occurs in the present day pottery of the Diegueño, and the archaeologic distribution is erratic.

Other clay objects, found in both desert and mountain areas, are pipes, rattles (Fig. 9, *D*),[30] figurines, pottery anvils (Fig. 9, *G*), and worked potsherds. The pipes (Fig. 9, *E*) are tapered cylinders either straight or slightly curved, generally having a triangular handle, which is usually perforated or notched. Only fragmentary portions of clay rattles have been found, but these are enough to show they were painted and perforated by a series of small holes arranged in parallel rows. One fragmentary gourd rattle, recovered from a rat's nest, was characterized by the same decoration as the fragmentary pottery ones. Figurine fragments suggest crude animal and human forms. Worked sherds are mainly rectangular, perhaps representing dice; large semi-disks, which were used for olla covers; and small, perforated disks.

[28] Rogers, 1936, p. 25.
[29] Meigs, 1939, p. 37.
[30] Rogers, 1936, Pl. 8, Fig. B.

DISPOSAL OF THE DEAD

In pre-Caucasian times disposal was universally by cremation. Burial did occur in the sense that the cremated ashes and bones were gathered together, placed in a pot and buried not far from the original place of burning.[31] This practice probably is comparatively late as its distribution is small and contact material is often present.[32]

The location of cremations in relation to the rest of the camp does not seem to conform to any definite plan. Sometimes in the larger camps, cremations are grouped together forming a cemetery. At other times, single cremations occur isolated from any sort of camp.

Most cremations contain at least one broken vessel and occasionally such non-perishable artifacts as metates, pipes, arrow straighteners, calcined shells,[33] and arrow points. This sacrificial offering is about the best indication of cremational remains. The sherds are well scattered over the surface and immediately below, seldom more than two feet, lie the calcined bone and ash.

PICTOGRAPHS AND PETROGLYPHS

Pictographs occur intermittently throughout the area.[34] The design elements are simple and show little or no sense of composition. The motifs are dots, concentric circles, triangles, straight lines, and conventionalized human figures. Both the simple line and solid block elements are employed. No representation of mammals, save humans, was observed, but some figures bear a resemblance to insect forms. Human hands, sun and star figures are quite common. Colors used were black, yellow, white, orange, and, in one case, grey clay was applied as a stucco coat. Of these colors, red and black are most common.

One cave in the northern portion of the Sierra de Juarez has superimposed pictographs. The cave is roughly 20 by 30 feet; a good portion of the ceiling is covered with paintings. The earlier paintings are all faded red and orange and the designs are essentially thin, single lined geometric figures. In contrast to these, the later designs are much fresher and brighter in color, and include thick lined geometric figures in orange, red, white, black, and a full sized human figure in yellow. Another interesting feature occurring in this late group is a circle with a double lined cross dissecting it. The quarter sections thus produced are filled with unfired grey clay. The circle and cross are not painted but pecked into the rock surface.

Another group of pictographs in the Carrizo Gorge contains two elements that suggest a rather late origin. One painting is a human

[31] Du Bois, 1907. [32] Davis, 1921.

[33] Mainly *Olivella undatella* and *Olivella gracilis*.

[34] Steward, 1929, pp. 84, 168, 233.

figure seated in what appears to be a chair and near the figure a "Christian Cross" is represented. The other figures are human and geometric. The pigment used appears to be a commercial oil paint or lamp black. This suggests either a very late origin for the paintings or retouching by some over-ambitious photographer.

Petroglyphs have been recorded in Davies Canyon near the International Line and in a canyon at the foot of the Sierra de Juarez Mountains some thirty miles south of the International line. The figures are all geometric designs and are fairly well covered with the brown patination, so characteristic of desert weathering. These designs show a striking similarity to the earlier geometric paintings mentioned in the superimposed group. Such a condition lends itself well to the suggestion that the petroglyphs came first and later their designs were transferred to the single line, red pictographs, this in turn followed by the addition of human figures, colors, and elaboration of design in the closing phase at about the time of white contact.

SAN DIEGUITO CULTURE[35]

This paper has dealt with pottery making peoples since the greater part of the investigation was centered around ceramic groups; however, within the same area exists a lithic culture, of which the writer knows little, but its presence should be noted and taken into consideration.

The greater number of San Dieguito sites occur in the mountainous areas on rocky ridges, hilltops, or plateaus. They are characterized by large chips and cores of basic plutonic rock, chiefly porphyry. Artifacts are limited to a variety of crude scraper (Fig. 11, 4–6), knives (Fig. 11, 2), and large points (Fig. 11, 1 and 3), all composed of plutonic rocks. In a majority of cases, the artifacts are covered with a considerable, yellow to reddish patina. Occasionally a San Dieguito tool occurs on a ceramic site, showing secondary use, as invariably the patinated margins have been retouched exposing a fresh cutting edge.

The location of sites, the absence of pottery, the crudeness of the patinated tools, and the occasional presence of retouched patinated tools on pottery sites tend strongly to suggest an antiquity for the San Dieguito culture greater than that for the pottery making groups which are known to have extended into historic times.

SUMMARY AND CONCLUSIONS

There is little doubt in the author's mind that the pottery making peoples discussed in this paper represent at least two prehistoric Yuman groups, the Eastern (Southern) and Desert Diegueño (Kamia). Further-

[35] This non-ceramic culture, known only from chipped stone artifacts, was first described by Rogers (1929). He discovered its presence on the coast, near the San Dieguito River, in San Diego County, hence the name.

more there does not appear to be any evidence suggesting that any major cultural changes have taken place, save for a few modifications in pottery types and the innovation of cinerary urns just prior to and during Caucasian contact. Moreover, the lack of any concentrated deposition in the camp sites and the uniformity of the material culture of the entire area does not permit ascribing any great antiquity.

Besides the local problem, there are others of larger scope. The primary one concerns the ceramic industry of southern California and northern Baja California, which, as has already been noted by Kroeber and others, suggests a strong Southwest influence, especially that of the middle Gila (Hohokam) region. Present archaeologic evidence certainly stands in support of this view. The pottery forms, the coiled paddle-and-anvil method of manufacture, the texture, the bichrome red-on-buff painting, and the practice of making ceramic offerings at cremation are features which are common to both southern California and the Middle Gila region.

During the rise and expansion of red-on-buff pottery in the Gila-Sonora region, any advance of this trait toward the northeast undoubtedly met with some degree of resistance by the true Pueblo cultures; however, toward the west the entire area was an open road for diffusion. Certain factors[36] support the suggestion of a westward diffusion of this trait: (1) aboriginal pottery on the coast of California is very simple both in manufacture and form, but eastward toward the Colorado River the ceramics not only show a greater diversity in form, but an improvement in manufacture finally reaching a climax in the Lower Gila region as exemplified at Snaketown; (2) diffusion is more apt to follow lines of similar environmental conditions, and the Lower Gila, a good deal of southern California, and a great part of Baja California, display a true Colorado type desert. The author feels safe in assuming that the pottery complex of southern California and northern Baja California represents a peripheral development which has taken on a local aspect and in which is reflected a survival of the once flourishing industry of the Gila-Sonoran region.

In addition to a pottery using culture, there is a second culture, the San Dieguito, a pure lithic industry. Considering all its aspects, and correlating them with the work set forth by Rogers, this lithic industry would seem by far the most ancient in the area; just how ancient, the author would not venture to say.

---

[36] George Carter, Department of Geography, University of California, notes an agricultural linkage between the Gila-Sonora and the Colorado River regions. Unpublished material. Spier, 1936; Gifford, 1936*b*.

BIBLIOGRAPHY

AMSDEN, C. A.
1936. *An Analysis of Hohokam Pottery Design.* Medallion Papers, No. 23.

CAMPBELL, E. W. C.
1931. *An Archaeological Survey of the Twenty-Nine Palms Region.* Southwest Museum Papers, No. 7.

CLAPP, W. B.
1907. *The Surface Water Supply of California.* U. S. Geological Survey Water Supply and Irrigation Paper, No. 213.

DAVIS, E. H.
1921. *Early Cremation Ceremonies of the Luiseño and Diegueño Indians of Southern California.* Museum of the American Indian, Heye Foundation, Indian Notes and Monographs, Vol. 7, No. 3.

DRUCKER, P.
1937. *Culture Element Distributions: V, Southern California.* Anthropological Records, Vol. 1, No. 1. Berkeley.

DU BOIS, C. G.
1907. "Diegueno Mortuary Ollas." *American Anthropologist,* n. s.; Vol. 9.

GIFFORD, E. W.
1931. *The Kamia of the Imperial Valley.* Bureau of American Ethnology, Bulletin 97. Washington.
1933. *The Cocopa.* University of California, Publications in American Archaeology and Ethnology, Vol. 31, No. 5.
1936*a*. *Northeastern and Western Yavapai.* University of California, Publications in American Archaeology and Ethnology, Vol. 34, No. 4.
1936*b*. "Cultural Relations of the Gila River and Lower Colorado Tribes." *American Anthropologist,* Vol. 38, pp. 679–682.

KNIFFEN, F. B.
1931. *Lower California Studies: III, The Primitive Cultural Landscapes of the Colorado Delta.* University of California, Publications in Geography, Vol. 5, pp. 43–66.

MIEGS, P., III
1939. "The Kiliwa Indians of Lower California." *Ibero-Americana,* Vol. 15. Berkeley.

PIERCE, C. C.
1939. *Masterkey,* Vol. 13, No. 4, p. 152.

ROGERS, M. J.
1929. "The Stone Art of the San Dieguito Plateau." *American Anthropologist,* Vol. 31, No. 3.
1936. *Yuma Pottery Making.* San Diego Museum Papers, No. 2.
1939. *Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Desert Areas.* San Diego Museum Papers, No. 3.

SPIER, L.
1936. *Cultural Relations of the Gila River and Lower Colorado Tribes.* Yale University, Publications in Anthropology, No. 3.

STEWARD, J. H.
1929. *Petroglyphs of California and Adjoining States.* University of California, Publications in American Archaeology and Ethnology, Vol. 24, No. 2.

University of California
Berkeley, California
December, 1941

SYMMETRY IN PRIMITIVE CONVENTIONAL DESIGN

GEORGE W. BRAINERD

ALTHOUGH the conventional design appearing on aboriginal American ceramics has been used successfully as a diagnostic feature in archaeological pottery classification, there has been little analytical and comparative work done on this mass of material.[1] Much of the design, despite the simplicity and wide distribution of its elements, is complicated and richly variable. This apparent complexity has been a stumbling clock in the way of its study.

The purpose of this paper is to present a generally applicable, objective terminology for a classification of conventional design. The terminology is based on symmetry of arrangement, which we have found more useful than any other scheme in elucidating complex designs.

Symmetry is defined (Webster) as "Correspondence in size, shape, and relative position of parts that are on opposite sides of a dividing line . . . , or that are distributed about a center . . . " Various types of symmetry found in pottery designs are illustrated in Fig. 12. If the reader has difficulty in visualizing the operations described, tracing the design on transparent paper and rotating or reversing it may clarify the explanation.

A comparative analysis of the symmetry arrangements included in two groups of design is given in Table I. Group A is a collection of sixty-one vessels of middle Pueblo III Black-on-white painted ware, excavated by the Rainbow Bridge Monument Valley Expedition from a cemetery near Kayenta, Arizona.[2] Group B consists of eighty-one panels and running designs incised on X Fine Orange pottery excavated by the Carnegie Institution of Washington, at Chichen Itza, Yucatan.[3] Both of these groups are characterized by a nearly complete absence of

TABLE I

	Group A	Group B
Bifold Rotational Symmetry	56	6
Mirror Symmetry	0	16
Offset Mirror Symmetry	0	30
Radial Symmetry	0	7
Serial Arrangement of Unsymmetric Motifs	5	22

[1] The beginning of such a comparative study in relation to form has been made (Vaillant, 1932).

[2] A report on this expedition, under the authorship of Watson Smith, R. L. Beals, and G. W. Brainerd is now approaching completion.

[3] This pottery was probably imported from the Mexican mainland, and equates with the Mazapan-Chichimec-Aztec I Horizon. For description and illustrations, see Brainerd, 1942.

identity in the designs appearing on any two vessels, and by considerable intricacy in most of the designs.

Two facts are clear from the above: that different types of symmetry predominate in the two groups, and that the symmetry of Group B is more diverse than that of Group A. These findings are not startling. The method of obtaining them demonstrates, however, that two widely differing, complex design systems can be compared objectively.

That the occurrence of types of symmetry in primitive conventional design is not mere chance is attested by the consistency with which the symmetry is followed throughout complicated designs. The system gives a basic order to material which would be otherwise chaotic. We do not mean to infer that such symmetry systems were named or recognized by the people using them,[4] but to state that they were followed exactingly, even if unconsciously, in the finer pieces of both collections analyzed.

Bifold rotational symmetry certainly constitutes the major type during the first three Pueblo periods in northern and central Arizona, and seems to have become less common in later periods. An analysis of material from this and other areas by these criteria should allow us to define the chronological and regional extent of various systems of symmetry, and to trace their spread and development.

The predominance of bifold rotational symmetry in Southwestern pottery design suggests that this design did not originate in the attempt to copy living things, since this form of symmetry is not found in plants or animals.[5]

Classification of types of symmetry often brings evidence of cultural borrowing into sharp relief if one allows the hypothesis that groupings of design elements, once they have been integrated into motifs as part of a closely organized symmetric system, tend to be copied as motifs in asymmetric or less symmetric arrangements by people of a foreign group. If the connected step and fret motif (Fig. 12, 1*a*, *c–d*) so common in designs of this hemisphere[6] can be assumed to have originated and been stabilized in bifold rotational design systems, its presence in asymmetric systems or systems having other types of symmetry suggests that it was copied from some other originating source. Connected step

[4] See Bunzel, 1929, for descriptions by modern potters of their procedure in creating new designs.

[5] This argument is supported by the fact that at least some of the life forms found on Pueblo pottery seem to have evolved from geometric designs of suggestive shape which preceded them (see Kidder, 1931, p. 129).

[6] A cursory survey of the literature shows connected step and fret designs in bifold rotational symmetry to be common in design from the Diaguite region in Argentina, from Pueblo ruins in southern Utah, and over much of the intervening territory.

and fret elements in Yucatan for example usually occur in simple serial arrangement in bands on pottery (Fig. 12, 5) and on stonework. Following our hypothesis, this motif may be assumed to have been introduced from an area where it was used in bifold rotational arrangements. The application of the above hypothesis to any given case must, of course, be governed by judgment, and its applicability can only be tested by careful, chronologically controlled work.

The significance of classifications of types of symmetry can only be measured after the analysis of large and varied groups of material. We hope that the above may serve as an outline of the method of analysis, and may suggest applications of this scheme of classification.

BIBLIOGRAPHY

BRAINERD, G. W.
1942. "Fine Orange Pottery in Yucatan." *Revista Mexicana de Estudios Anthropologicos*, Vol. 5, Nos. 2–3.

BUNZEL, RUTH
1929. *The Pueblo Potter*. Columbia University Contributions to Anthropology, Vol. 8.

KIDDER, A. V.
1931. *Pottery of Pecos*. Yale University Press, New Haven. Vol. 1.

VAILLANT, G. C.
1932. *Some Resemblances in the Ceramics of Central and North America*. Medallion Papers, No. 12, Gila Pueblo.

Carnegie Institution of Washington
Division of Historical Research
Cambridge, Mass.
November, 1941

DISCUSSION AND CAPTIONS FOR FIG. 12

Bifold rotational symmetry, Fig. 12, 1. *Z* is the center of symmetry. In this type of symmetry, if the design is revolved about *s*, the original position of all the parts is reached more than once during a complete revolution. The examples shown in this figure are in bifold rotational symmetry, a 180° revolution about *s* brings the designs to their original positions. This type of symmetry does not occur in living objects. *b* from an X Fine Orange jar from Chichen Itza, Yucatan; *a*, *c* and *d* from black on white jars from Kayenta, Arizona. Centers of symmetry occur twice in each repeat on *c* and *d*, which are running bands, as distinguished from the single center of symmetry on the panels shown in *a* and *b*.

Mirror symmetry, Fig. 12, 2. *X-x'* is the line of symmetry, the part of the design to the right side of the line is a mirror image of that to the left of the line. This type of symmetry predominates in the animal kingdom and is common among plants. *a* is incised on an X Fine Orange bowl from Chichen Itza.

Offset mirror symmetry, Fig. 12, 3. *X-x'* is the line of symmetry. If a mirror image of the upper half of the design, is moved along *x-x'*, one half the distance between repeats, it will coincide with the lower half of the design. This symmetry type does not occur in animals but is sometimes found in plants. *a* is the design from an X Fine Orange bowl found at Chichen Itza.

Radial symmetry, Fig. 12, 4. Both *mirror* and *rotational* symmetries are present. These forms have a single point of rotational symmetry *s* and several lines of mirror symmetry *x-x'*, x_1-x_1', etc. This symmetry type occurs on rosettes of various kinds, in flower forms, and in many aquatic animals. *a* is a design found on an X Fine Orange bowl at Chichen Itza.

Serial repetition of asymmetric elements, Fig. 12, 5. This group shows no symmetry according to Webster and is included simply because of its common occurrence in groups of designs. Compare Fig. 12, 5 with Fig. 12, 1*c* and 1*d* where similar motifs occur in symmetric arrangement. The design illustrated is incised on a slateware bowl from Kabah, Yucatan.

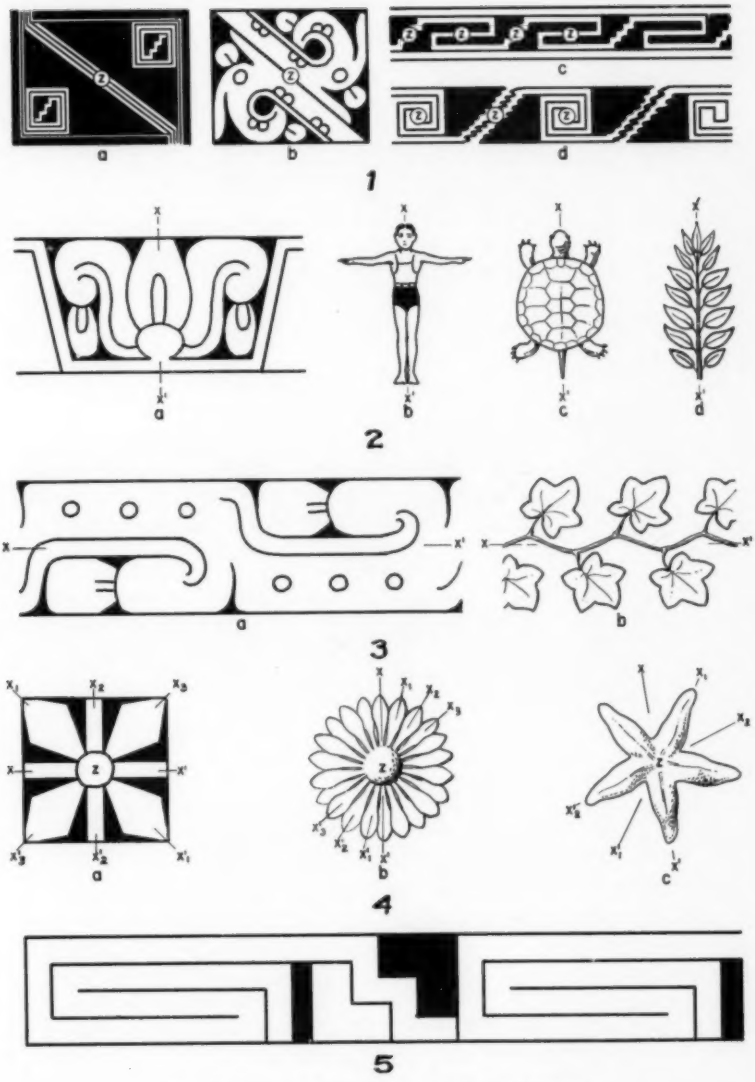


FIG. 12.—Types of symmetry in design and life. See facing page for discussion and captions.

The Moses Coulee Pipe, Washington

THE MOSES COULEE PIPE[1]

ALAN G. MAY

MANY unusual and decorative pipes of the early Indians have been discovered in the Northwest, but, as far as it is ascertainable, only one pipe of considerable antiquity has ever been found enclosed in a wooden case especially designed to fit the pipe. Such a pipe and case, which the writer fortunately was able to acquire at a later date, were found in 1934. Considering the exceptional rarity of such a "find" it would seem that these specimens are worthy of some consideration.

Moses Coulee is a great chasm formed by the ice and waters of bygone ages; it is about forty miles in length, approximately one mile wide, and from six hundred to one thousand feet deep, entering the Columbia River valley about twenty miles below the city of Wenatchee, Washington. This district is well known for the abundance of the archaeological material and particularly for the fine craftsmanship of the majority of artifacts. Five miles from the lower end of the Coulee on the northern side, there is a large cave in which the Moses Coulee Pipe, as it is now known, was found. The opening to this cave was not visible from the ground level of the Coulee, being hidden by a mound of rocks, or talus, which had fallen from above over a long period of time. The entrance was small, low, and steep, and the floor level of the interior was comparatively flat. The cave was situated on the property of a rancher, who, in order to use the cave for storage purposes, cut through the mound of talus and cleaned out the cave by means of a team and scraper. It is estimated that by the time this work was completed, over forty tons of dirt and debris had been removed. In the course of this "excavation" a few artifacts were noticed and saved. The rock bottom of the cave was found to be four and one half feet below the original floor level. Here, on the rock bottom, stowed away in a niche in the irregular rocky wall, the rancher found a bundle of sagebrush matting. Inside this bundle was found the Moses Coulee Pipe enclosed in its case.

The pipe, of unusual shape, is made of steatite, and is black and polished from much handling. The type of pipe most commonly found in this locality is tubular or "cigar-shaped," whereas this pipe has a large "bell-shaped" bowl, and a long, straight stem with an ornamental mouthpiece. The bowl is thin and of exceptional evenness. The interior

[1] A previous description of this artifact, under an identical title by Charles Hill-Tout, appeared in *Transactions of the Royal Society of Canada*, XXIX, Sec. 2, pp. 219–224, 1935. As the circulation of this publication differs from that of AMERICAN ANTIQUITY we publish herein Mr. May's article in which a certain amount of new information is included.

of the bowl shows considerable usage and has the appearance of an ordinary carbon-caked pipe bowl. With the exception of the mouthpiece, the pipe is perfectly symmetrical. At first glance the mouthpiece appears to have been broken. However, if this was so, it has since that time been reworked and refinished. The use of the two holes in the flanges on each side of the mouthpiece is unknown, but possibly they may have been used to attach some ornamentation, such as feathers, perhaps for specific ceremonial occasions. Some striations, which are undoubtably ornamental, appear on the bowl. One thin, indistinct line encircles the bowl one quarter of an inch from the edge. From this encircling line striations run lengthwise of the bowl, finishing at the tapered end where the stem commences. The length of the pipe is seven and seven-eighths inches overall, the stem being one half inch in thickness, and the bowl two inches in diameter.

The pipe case, made of cedar, is cut longitudinally in two sections and shaped to fit the pipe. However, the stem end of the pipe case has been hollowed out for a distance of two inches beyond the end of the pipe stem. It would seem likely that a reed stem or separate mouthpiece might have been kept in this part of the pipe case at one time. Some of the soft inner bark of the cedar tree, twisted together, was placed in the bottom half of the case to cushion the pipe, and a plug of like material was also found stuffed in the bowl. On the bowl end of the upper half of the case there is carved in semi-relief, a typical local Indian V-shaped design on three parallel rows. Near the center is a small groove which encircles both halves of the case. This was evidentally made to hold a thong with which to tie both sections together. Between this central groove and the stem end there are incised two human-like figures, two and one half inches long. The bottom half section of the case again has the V-shaped semi-relief carving on the bowl end, although of a different design and covering a greater depth than that on the upper half section. An incised figure, probably representing a lizard, four and one half inches from tongue to tail, appears on the stem end above the encircling groove. It is interesting to note that the two human-like figures show remarkable similarity to some of the old petroglyphs that are to be seen at many places along the Columbia River in this vicinity, although the lizard design is only occasionally seen. The overall length of the pipe case is eleven inches, the bowl end being two and one half inches in diameter. The total weight of the pipe case, pipe, and soft inner bark, is four ounces. When found, this cedar case was in perfect condition and this may be accounted for by the fact that the cave is absolutely dry.

The cave, with its smoke-blackened ceiling, had obviously been used as a dwelling place for a long time. Bones of the mountain sheep

and goat, bear, deer, elk, and other animals were found on the dump pile formed by the rancher, as well as numerous artifacts which were screened out at a later date by interested persons. The entrance to the cave was almost completely sheltered by the mound of talus which rose higher than the top of the cave roof, thus protecting it from the winds.

The period of time necessary to accumulate four and one half feet of debris in this sheltered cave is problematical and many varying factors must be taken into consideration, but all indications seem to point to two or three centuries at the least. It is highly probable that about a century has elapsed since the occupation of the cave.

The Moses Coulee Pipe and pipe case are remarkably fine specimens and most evidentally were highly prized by the original owners. The careful method used to protect the pipe from damage, viz., the padding in the pipe case, the pipe case itself, the wrapping of both pieces in sagebrush matting, the placing in a protective niche in the wall, together with the careful and laborious amount of work expended in making both pipe and pipe case, would indicate that these pieces had some very special significance and importance to the Indians.

North Central Washington Museum Association
Wenatchee, Washington
December, 1941

FACTS AND COMMENTS

TAXONOMY AND THE DIRECT HISTORICAL APPROACH

It seems apparent from Julian Steward's latest statement on *The Direct Historical Approach to Archaeology*[1] that he still conceives of a basic conflict, or at least an inherent competition, between the direct historical and midwestern taxonomic methods, in spite of his initial statement to the contrary. He manifests a conviction that the latter is being overemphasized at the expense of the former. If his fears are well founded (and there are instances of malpractice which might be cited in support of his position), I should be among the first to join his crusade in defense of the direct historical "approach." However, in that case, his criticism should be directed against the culprits who are misusing methods rather than against any given method itself. Instead, Steward adopts the tone of one who sets out to compare the respective values of two conflicting methods, to the glorification of one and the general degradation of the other.

Actually, not only is there no conflict between the two methods, as admitted by the author in his first paragraph (an admission which obviously is retracted in spirit throughout the major portion of the article), but the two methods can not be compared as to general value since each is intended to render a specifically different service. One might as well argue as to the relative value of a knife and a fork as general eating tools. Generally, they can not be compared, but, specifically, the fundamental purpose is best served by cutting the meat with the knife and conveying to the mouth the bite so prepared by means of the fork. Of course, the food may be eaten with a knife only, or even with the fingers, if one so chooses, but convenience is best served when both tools, as well as other tools, are employed to perform the complex act of eating. Archaeological research is a complex procedure which requires a variety of tools, each intended to serve a specific purpose. No single tool will perform all purposes equally well; we need every method which can be demonstrated as useful in advancing research towards its fundamental objectives.

The author's misconception of the intended purpose of taxonomy in archaeological methodology can best be illustrated by referring to his own words. For example, there is the statement: " . . . interest in New York seems recently to have drifted away from problems of history to those of taxonomy."[2] Perhaps the prodigal sons of the Empire State will choose to prepare their own answer to this accusation and I have no desire to steal their thunder, but I must say that I fail to see any necessity for a lessening of one interest to build up the other. I presume that one can recognize the need of a systematic terminology to apply to historically unidentified culture manifestations without losing interest in history or slowing down efforts to establish historical connections, direct or indirect, wherever possible. I have not noticed that such brakes have been applied in New York. The average human mind is perfectly capable of entertaining and promoting both programs at one time.

In demonstration of his conception of the relative uselessness of culture classification in archaeology, Steward reminds us that it is now becoming possible " . . . to describe archaeological materials in terms of time and space," and concludes that " . . . where history has already been blocked out, it is difficult to see what is gained by scrapping a scheme with historical terms and categories in favor of a non-historical one."[3] I have heard of no proposal to "scrap" any procedure or terminology relating to the direct historical method. Taxonomy may be employed to apply arbitrary terms to manifestations,

---

[1] American Antiquity, Vol. 7, pp. 337–343. [2] *Ibid.*, p. 338. [3] *Ibid.*, p. 339.

and to indicate similarity relationships, where no historical connections are as yet feasible —in short, when the direct historical approach can not immediately be applied; and similar terms may be added to established historical terms, without "replacing" them, in order to facilitate comparative studies between manifestations respectively of known and unknown historical connections. Parallel procedure in any science which has to deal with progression from the known to the unknown, and consequently of treating in instances the unknown as still historically unconnected with the known, is too common to require specific mention.

After picturing "archaeology" (no doubt referring to a conceived movement or faction which is not interested in ethno-history) as considering itself other than a cultural science, the author remonstrates: "It is too often forgotten that problems of cultural origins and cultural change require more than ceramic sequences or element lists."[4] There can be no quarrel with the statement, but its use in the presentation of his argument presupposes that the student who uses taxonomy is only interested in the systematic organization of his materials; that taxonomy, as employed by the prodigal sons of various other states in addition to New York, is treated as an end in itself. Actually, as proposed and correctly practiced, taxonomy in archaeology is no more an objective than are ethno-historic demonstrations. Neither attains the goal of anthropological purpose; each contributes something towards a progression goal-ward. If there are those who have treated classification as an objective, they are subject to critical attack, but it should not be forgotten that there are those who have conceived ethno-historic demonstrations, and even logical ethno-historic assumptions, to be the final objective. In either case, those who have overemphasized method are censurable; not the methods.

The author devotes some space to listing the unquestionable accomplishments of various investigators who have employed the direct historical method over a widespread area. To that list he might add Wisconsin, where McKern has tentatively identified two manifestations as prehistoric Winnebago and protohistoric Dakota, respectively. Strange as it may seem, these direct historical approaches were made in spite of the fact that the two manifestations also bore such taxonomic handles as "Lake Winnebago focus, Upper Mississippi phase," and "Clam River focus, Woodland pattern." Apparently neither procedure interfered with the other.

In regard to the citation of Strong's valuable work in Nebraska, I should like to point out that he did a great deal there which was quite independent of any historical approach. As evidence in the extreme, just how does one employ the direct historical approach in regard to the cultural evidence of Level I, Signal Butte site? But we do not need such remote examples. Independent of any ethno-historic interpretations, Strong has recognized cultural manifestations identified on a basis of purely cultural data, has defined them in terms of "element lists," and has supplied them with such arbitrary names as "Upper Republican," "Nebraska," and "Dismal River." Moreover, he has made comparative studies of these manifestations, involving the use of "ceramic sequences," to set up widespread cultural correlations. Only where known stratigraphy and ethno-historic data warranted has he added conclusions relating to time and historical connections. If he had classified his culture groups according to a standard plan accepted by other workers in the same general field (which he did in so far as seemed profitable at the time), thus permitting them to visualize the cultural significance of these Nebraska manifestations in terms of local phenomena, the resulting taxonomic arrangement would not have interfered with or disturbed in any way the nature of his work, but it would immediately have called to the attention of other students in the general field the occurrence of the same phenomena and related problems in their respective provinces, and

[4] *Ibid.*

might actually have hastened the clarification of problems regarding time and ethno-historical connections.

Wedel has actually done this, greatly clarifying the picture of cultural variety and inter-cultural similarities throughout the central Great Plains,[5] and yet this did not prevent him from attempting to show in the same publication, on a single chart, interrelationships involving culture, distribution, time, and ethno-history, for the same area.[6] Where is the conflict? In what manner did one treatment curtail or in any way alter the other? The taxonomic treatment did, however, serve two important purposes: (1) it enabled Wedel to graphically represent highly significant cultural similarities, in both local and widespread concept, where ethno-historical interpretations were not as yet warranted, and to connect these manifestations typologically with those for which ethno-historical interpretations have been made; and (2) it enabled other students in the same and marginal provinces to more readily correlate Wedel's data and conclusions with their own related phenomena, in terms of a common language.

A splendid example of how the two methods may serve coöperatively is offered in the progressive studies of a western subdivision of what has become known as the Upper Mississippi phase. Previous to any opportunity to apply the direct historical method, several easily recognizable varieties of what had long been known as the Upper Mississippi culture, and later classified as the Upper Mississippi phase, had become fairly well known in Wisconsin and Iowa. For convenience, as indicative of their apparent relatively close relationship, they were classified as several foci in the Oneota aspect of that phase. Rather late in the course of investigations, materials characteristic of one of these, the Orr focus, were found at sites historically reported to have been occupied by the Iowa division of the Chiwere Sioux, and with historic trade materials present in the graves. On the basis of this, the Orr focus was identified as protohistoric Iowa. Independently, materials characteristic for another of these manifestations, the Lake Winnebago focus, were found exclusively present at a site historically recorded as one of the old Winnebago village locations. These and additional corroborating data led Griffin to suggest that the Oneota aspect might correlate rather closely with the Chiwere Sioux. Whether or not the culturally similar Oneota manifestations can ever be exclusively ascribed to the ancestors of the Chiwere Sioux, the taxonomic correlation certainly has served to foster interest in involved historical problems, and to spur direct historical research in this field.

There is need for the direct historical approach, for taxonomy, and for any other methods which may prove useful, independently under limiting circumstances, and cooperatively where possible. It is true that ethnographic and historical studies " . . . will overlap with and be tremendously facilitated by direct historical studies in archaeology,"[7] and in instances these will be aided rather than hindered by a taxonomic treatment of archaeological data. No one has stressed more than I the historical and cultural objectives of archaeology which, aside from method, might almost be defined as ethnology projected into the past. Taxonomy, no objective in itself, actually implements the student to reconstruct an historical and cultural picture which may be integrated with and augment the time-limited concepts of the ethnologist. The objectives of archaeology,[8] no matter how far they may lead through historical interpretations to an increasing knowledge of cultural dynamics, will be approached with greater facility and accuracy if all helpful methods are employed. No single approach is adequate in scope to fill the bill.

W. C. McKern
Milwaukee Public Museum

---

[5] In *Essays in Historical Anthropology of North America*, Smithsonian Miscellaneous Collections, Vol. 100, p. 345. [6] *Ibid.*, p. 343. [7] Steward, *op. cit.*, p. 341. [8] *Ibid.*

THE HISTORICAL APPROACH TO ART IN ARCHAEOLOGY IN THE NORTHERN WOODLANDS

In the last issue of the *Minnesota Archaeologist* (Vol. 8, No. 2, April, 1942) Mr. B. W. Thayer has contributed four articles on art analysis of the erstwhile Arapaho and Cheyenne of the Minnesota prairie-woodland area and the still resident Ojibwa and Red River Cree, which bid fair to challenge attention of those who were impressed, favorably or unfavorably, with some points brought out in Dr. Steward's recent article in this journal on the historical approach to archaeology. It has for some time been an open question in the opinions of students of design in the northern sweep, from the Great Lakes to the Rockies, in how far certain distinctive traits of Plains Algonkian culture might have been carried over from older woodland residence. Mr. Thayer deals with some characteristics, interpretable by him as signs of the same, present in the moccasin structure and designing of figures in historic beadwork. His analysis is keenly observational and the material in museums abundantly massed into types which lead him to certain conclusions that we all may regard as indicative of what impressed Boas, Kroeber, Grinnell, Wissler and others, as distinctiveness in Plains Algonkian styles. Mr. Thayer looks at his problem from the western angle and points out six features in Arapaho moccasin styles which he attributes to an Algonkian milieu. As the writer, looking at the question from the area of the Algonquin of Ontario and Quebec and farther east, has for some time been alert to discern what lies in the background of art form bearing upon the same question, it seems that there is something to weigh in the balance favoring Mr. Thayer's historical interpretations. The lack of positive proof coming from the people themselves attesting the retention of older woodland motivations in decoration and old preferences for color space disposal of beaded designs is the chief obstacle in the suggestions he offers. The continuity of older distinctly tribal, even areal, penchants will be open to serious question in the minds of others who are dubious of the prospects of tracing origins for an art as recent as beadwork. Mr. Thayer holds to certain traits which he points out as being sufficiently diagnostic of the woodland period for the ex-woodland Algonkian groups. And there is an implication in what he has found through examination with sharply focused eyes that he is thinking in reasonable terms. The writer likewise has been looking for some such move in hypothetical reconstruction of changes occurring in the transition of art forms from east to west. It would not be too surprising now if a step be registered in sighting for historical retrospects.

Of the six characteristics marked off by Mr. Thayer as identification traits for Arapaho moccasins, two are casually traced by him to peoples of the timbered territory of the East. One of these is the welted seam in leather work. We may pass over this as an observation to be verified by closer examination on the part of investigators having access to collections in mass of footwear and garments from peoples (excluding the Eskimo) whose past lies in some way connected with Algonkian-speaking forebears. The other trait he singles out for scrutiny is the preference for black in the selection of colors for beadwork and as a shade deliberately produced in leather tanning. Evidence is cited on the basis of records covering a wide region of the East, and a few extant specimens of black-tan leather in museums are designated to establish the point. Black as a ground field for color designing and as a medium in color schemes is veritable fact. It is noted from the Micmac to the Ojibwa and in the designs of intervening groups. The use of black trade cloth and velvet by eastern tribes is attributed to a preference for this color, since it resembled the old black-dyed buckskin of the pre-contact period. While one may agree with this historical profile, it still remains apparent to the possessors of specimens in museum and private collections that the identifiable objects fashioned in black-tanned leather are preciously few. The art work of modern groups of the East is devoid of exam-

ples. The intrusion of black trade cloth has been the cause. During the course of field work in the northeastern area, the writer has rarely encountered specimens or testimony of the black-tanning process among bands who occupy regions where it was formerly known. The circumstance led him some years ago to make it a point of inquiry. The result in part was to obtain from an elderly woman of the River Desert Algonquin at Maniwaki, P.Q. a description and specimen of the process, following a request for note data by Dr. Wissler. As coming from a contemporary band of Algonquin in the north central area, the description is summarized here for the first time in print. It differs in some details from that given by Mr. Thayer as obtained from the Cree of Ontario and Manitoba in 1935. Mrs. Michele Buckshot was the source of information quoted as follows.

> After the skin has been stretched upon a frame and scraped, it is soaked in a coloring matter made up of any of the following ingredients: butternut shells which have been hammered until fine and boiled over night (*pagandkwmin*), alder bark (*adohp*). hemlock bark (*kakagiwęc*). It is soaked in the dye matter over night. The next day it is washed in soap water. After being dried, a little fish oil, hen oil or bear's grease is rubbed into it. Then it is washed again in soap water, and afterward wrung out and allowed to dry slowly. The next step is the smoking process effected in the ordinary manner by forming the skin into a bag and suspending it over a smudge. The treatment of the skin to produce the black color has no effect upon the quality of the leather in respect to its strength or resistance to water or its washableness. The oil, however, is not completely washed out. *The purpose of the treatment in producing the black color is solely ornamental (esthetic).*

The italicized final sentence affords supporting testimony to Mr. Thayer's conjecture that black is a preferential color in the eastern art area. His ship of theory launched in the sea of speculation is not loaded with cotton for ballast. We can hardly ignore the point he emphasizes after noting the choice of black in both background and design outlines in Micmac quill work and beading, here and there in northeastern Wabanaki, in Iroquois, in Delaware and some Central Algonkian locations besides those he mentions.

Recently obtained information from the Delawares of Oklahoma provides the data on preparation of the dark brown to dull, almost black, tan for which this people has been noted in the past, as Mr. Thayer's quotations indicate. The method of treating leather to effect it, however, has escaped attention of ethnologists so far as I have observed. The informant, Fred Washington, explained that the buckskin should be soaked over night in water strongly impregnated with bark boiled from the red bud tree (Judas tree, *Cercis canadensis*). The tanning treatment in the scraping and smoothing operations is continued in the ordinary manner until it is smoked. Then corn cobs, or red bud bark are used, the corn cobs imparting a somewhat greasy quality to the product. Some particulars were added which indicate that the process is a delicate one for which the performer needs to have knowledge of the condition of the skin and of its "life."

That the dark tanning treatment is known to the Penobscot is attested by Walter Ranco of that tribe in Maine. The process here is to soak the deerskin overnight in hemlock or alder dye, boiled out of the bark. Deer's brains are rubbed into the leather to cure it, then a rubbing over with the tallow of some different animal follows "to drive out the original grease." For deerskins, moose tallow is ordinarily used, and vice-versa. After the usual repeated soaking and rinsing, the tanning is finished by smoking the skin with cedar. Some claim to prefer birch wood for the latter operation. As yet I have not secured information to show that the Malecite of New Brunswick possess the "black tan" process. It will be noted that the Penobscot and Algonquin (River Desert) methods coincide quite closely.

Once the point is brought to attention we shall hear more of it from field ethnologists and the handlers of documents and museum collections of old and late date bearing upon the life of eastern Indians. In the sporadic recovery of leather remains of objects from grave sites, it would be significant if evidence could be gotten to show whether the blackened appearance of the material exhumed was due to cultural agencies (tanning) or resulted from conditions of its preservation in the soil.

Having so far assumed the role of a commentator upon some of Mr. Thayer's ideas, the writer is moved to add some remarks to his views concerning the hexagon figure which he lists as a distinctive design in Arapaho art having antecedent associations with eastern art. The hexagonal design, sometimes straight-sided, sometimes curved, resembling a rosette, is widespread throughout the East and Northeast from New England and the Labrador peninsula to the Great Lakes. It occurs at points farther westward which he makes the object of another interpretation of art history in the northern and southern Plains area. In the Labrador area the writer has found and recorded the figure as a representation of the "heart" of the hunter. It is a fundamental element in the center of a composite pattern. It is a prominent religious symbol in Naskapi art composition. We have yet to learn what it symbolizes in the Central Great Lakes region where its presence is abundantly attested in beadwork and quillwork. It seems fair to assume, as Mr. Thayer does, that here is another hold-over among the Plains tribes from an art legacy of the East. It even goes below the modern horizon into that of archaeology at some points in the East and Southeast. And another focus in art history takes form as a challenge to the archaeologist and ethnologist in company.

Whatever may be the judgment of the archaeologist and ethnologist in respect to the research venture of the author of the series of articles in the *Minnesota Archaeologist* it becomes evident that the efforts of non-professional students who devote attention seriously to the problems of cultural history are worthy in many instances of respectful consideration. The holding of a doctorate in philosophy is not a prerogative for all historians as some of us are coming to learn.

FRANK G. SPECK
University of Pennsylvania

AN UNUSUAL PIPE FROM HADLEY, MASSACHUSETTS

This pipe was found in a field east of the old Hoccanum Road in Hadley, Massachusetts, by William Lamb of South Hadley Falls, after the spring freshet of 1936.

It is a most unusual type even for New England territory. It seemingly is of Iroquoian-Mohawk production and bears the decorative motifs used by them in their Champlain Valley home district near the mouth of the Winooski River in Vermont. It might well be considered that it was produced within the territory where it was found, for the clay and graphite mixture of which the pipe is made, the implements used in making this pipe, as well as the stylus markings are characteristic of the work of the Indians of the Connecticut Valley.

The Mohawk for an extended period before and after the coming of the Pilgrims, raided and ultimately attained sovereignty over the Indians of this part of the Connecticut Valley. It was during this period that they exercised their rights and came with their families to the different falls within the State to fish and make their pottery from the superior quality of clay that was found here in abundance.

The pottery found upon the Northampton meadows directly opposite and across the river from Hadley was presumably of their making, and certainly the decorative features of this pipe were the same, save in the sculptural work which is most unusual.

The decorative motifs of the head dress forming the upper portion of the bowl is pronouncedly characteristic of the work of the Champlain Valley Mohawk. The crowning rim and the forehead bands are both made by indentation, using separate types of implements that were common throughout all Algonkian work, and making impressions either of an ovate leaf shape, or of a straight wedge shape dash. The wide intermediate band was done with a stylus, forming a diagonal line pattern that is a variation of the basketry weave design so often used by this Mohawk group.

A most unusual feature is that of the earlap head dress at either side of the pipe which might have been a representation of a conventionalized hair decoration. A search of all available volumes illustrating aboriginal North American head dress reveals no such decorative motifs short of Mexico, and even those are of a more florid nature. It is in full relief and is composed of three decorative bands of indentations with straight vertical line bands between. The outer two decorative bands have horizontal indentation markings, identical with some found on sherds in the University of Vermont collection, while the central band has pairs of anticlinal indentations from top to bottom.

On the end of the pipe away from the stem the face is framed with a band having horizontal indentations at either margin, while the three vertical lines of the inner section continue unbroken around the face. This band, in section, is almost half round relief and might indicate a basketry form in which a child was placed while quite young.

The sculptured features are two faces, one above the stem, the other—reversed—opposite to it on the outer side of the pipe bowl. These faces are more than a series of the three circular indentations that are commonly found on Mohawk pottery. They are truly sculptural work. The outstanding modeled forehead, nose, and the deep set eyes with the square set chin of each, are all a great advancement over of the general run of face portrayal found in this ware produced in New England territory. The view of the right side (Pl. VI, *b*) clearly indicates the high relief as well as the use of the sculptor's modeling tool, as shown in the deep undercut markings back of the band surrounding the face at the heel of the bowl, and by the deep undercuts that frame both faces.

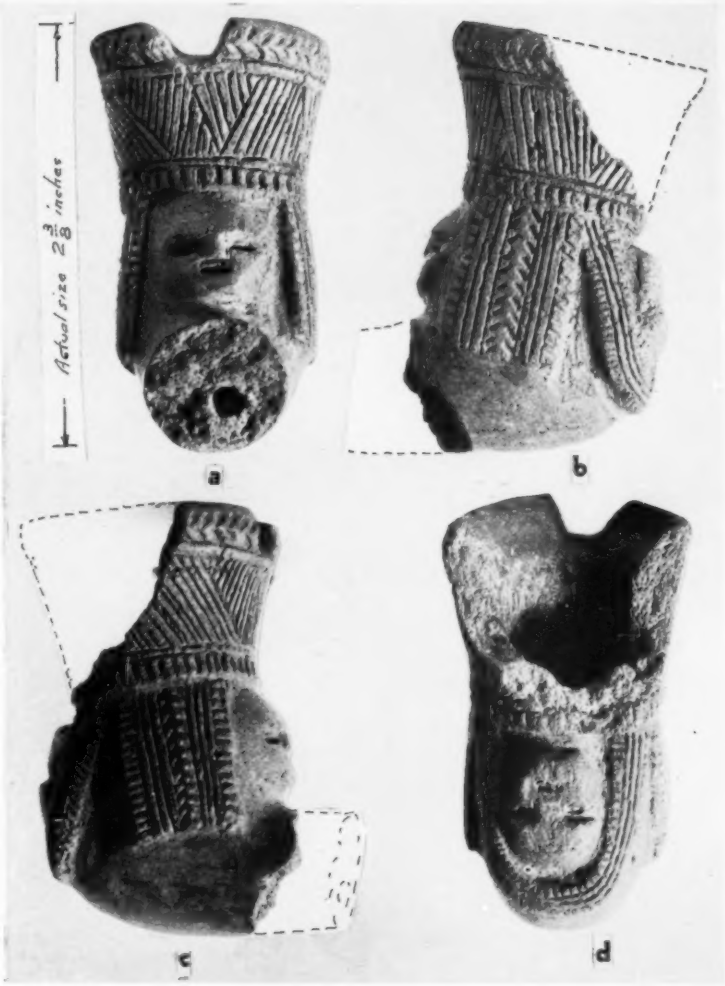
The mixture from which the pipe was made has the appearance of being a fine powdered and sifted clay, evidently having a quantity of powdered graphite added as a tempering material, as was so frequehtly done within this territory. It was air dried and partly fired to a dark reddish brown on the exterior, but far from reaching a state of vitrification. The inner section, as shown by both the broken stem and bowl ends was almost black.

The workmanship was executed with extreme and patient care so that all indentations and stylus markings are of a uniform width and separation from each other. Only a proficient artist having a proper sense of proportion could have produced such a piece.

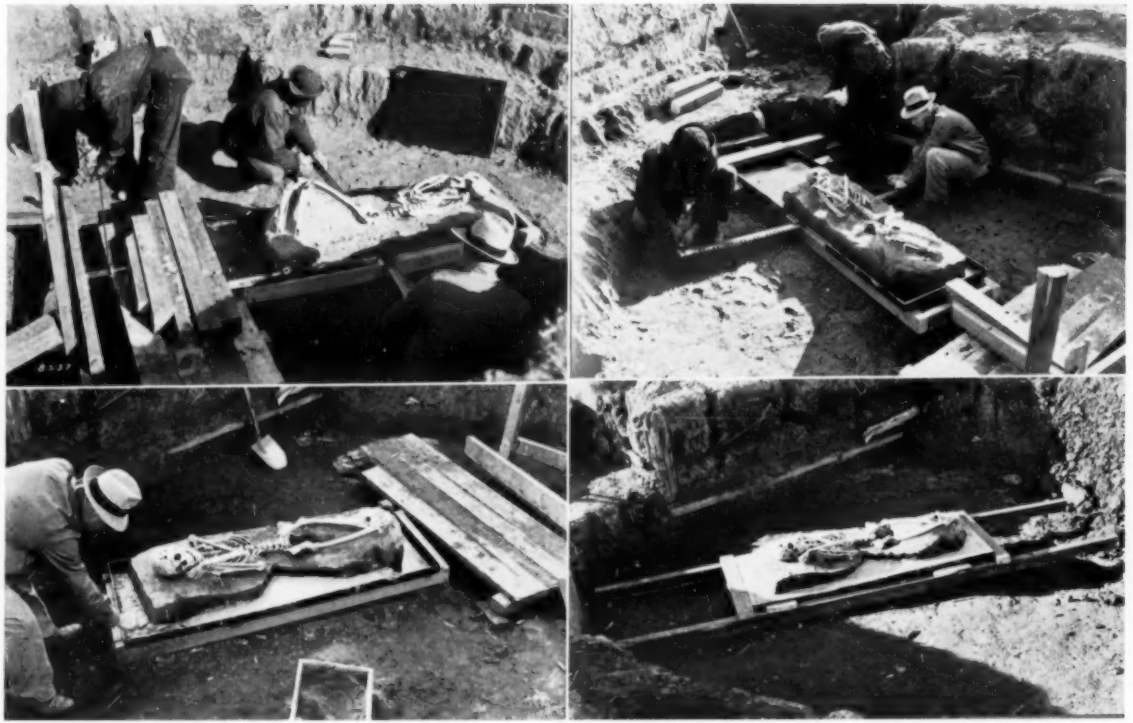
WILLIAM J. HOWES
Holyoke, Mass.

AN INEXPENSIVE METHOD OF RECOVERING SKELETAL MATERIAL FOR MUSEUM DISPLAY

The recovery of skeletal material for museum display quite often presents an engineering problem that is not appreciated by the archaeologist until after damage has been done. In too many cases, the archaeologist upon finding such a burial will immediately attempt to remove it, using whatever equipment happens to be at hand, without considering the cohesive properties of the matrix in which the skeleton lies or the stresses that the method about to be applied will exert. No matter how hard or solid the matrix may seem, its tensile strength will almost certainly be extremely low. Consequently, in under-



Four views of the pipe found in Hadley, Massachusetts; *a*, the smoker's view, *b*, right side, *c*, left side, *d*, front.



(Photographs by courtesy of the National Park Service)

Recovering skeletal material for museum display. *Top left*, sliding the first iron pan under the clay block while the block is undercut with two saws; *top right*, the second pan is pushed into position directly behind the saws; *lower left*, filling the pan with cement; *lower right*, unit ready for removal.

cutting any part, provisions must be made for its support. The method about to be described provides for this support and at the same time requires only a small amount of equipment usually obtainable at very little cost.

For the past six years, the National Park Service in coöperation with the Civilian Conservation Corp has been conducting an archaeological project at Jamestown in tidewater Virginia. The principle concern of this project has been the systematic exploration of the early colonial town of Jamestown. During the summer of 1940, the skeleton of an adult male Indian was found within the boundaries of this seventeenth century town. By stratigraphy and associated artifacts the burial was dated as of the Jamestown period. Considering the important part that the Indians of the Powhatan Confederacy played in the history of Jamestown and the fact that this was the first Indian burial to be found in the site, Associate Archaeologist J. C. Harrington and the writer agreed that it should be incorporated in the exhibits at the Jamestown Museum. As an exhibit piece its original position was considered of more value in stimulating public interest than any other aspect. It was, therefore, decided to remove the skeleton without disturbing it or its matrix.

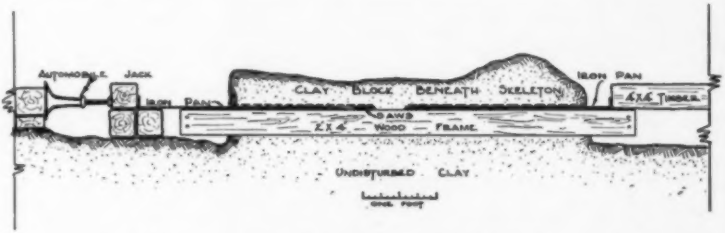


FIG. 13.—Cross-section diagram of removal of skeletal material.

The skeleton lay in a bed of clay that became extremely hard upon exposure to the air. This clay was carefully removed from around the subject until a small block of the material about ten inches high was left under it. Ambroid and acetone were applied to each bone as it was uncovered. A similar treatment of the underlying clay, after the latter had thoroughly dried, served to prevent it from crumbling. The general plan of attack involved the use of two cross-cut saws, two iron pans of quarter-inch iron made by a local blacksmith, some cement, four ¾-inch steel rods about thirty inches long, an automobile jack and a few pieces of lumber. The plan was to undercut the block with the saws and slide the iron pans under the block in the slits made by the saws. By using two iron pans instead of one and by pushing them under the burial from opposite ends the amount of friction to be overcome was cut in half. This had the advantage of reducing horizontal stress to a minimum. A frame of two-by-fours was first made to fit tightly over the block of clay leaving about six inches of the block above the frame. This frame was to serve as a guide for both the saws and the pans that were to follow. When the two saws were strapped together and used, they made a slit just wide enough to allow the quarter-inch iron to pass through. The saws were three inches wide, which meant that the pans could follow within four or five inches of the actual sawing.

As soon as the first pan had been forced a foot or so under the clay block, it was found that part of the weight of the block was resting upon the pan and that, consequently, a great deal of pressure would have to be used to force the pan to the center of the block. An automobile jack was, therefore, placed behind the pan to force it slowly ahead.

Blocks and braces were placed behind the jack as needed. Once the pan was in position, the handle was taken off one end of the saws so that they could be slipped out of the cut. The second cut was then started from the other end of the block where the process described above was repeated, using the second pan. With the iron pans in place, the area around the block and within the pans was filled with cement, using four small rods at the juncture of the pans as reinforcing steel. The cement made the pans, and the clay block within, into a solid unit ready for removal. At this point, the frame of two-by-fours under the iron pans again came into use. The pans had been designed just wide enough to rest on the wooden frame. Once handles had been nailed onto the frame, the entire unit could be picked up and carried away to the laboratory. Inspection showed only minor cracks in the original clay block upon which the skeleton had rested throughout the operation.

Figure 13 shows the method used in maintaining a continuous support under the clay block while it was undercut. It is not certain that all of the procedure described above will work equally well in every type of soil. It is believed, however, that suggestions made here could be adapted with minor changes to almost any situation.

CONRAD B. BENTZEN
National Park Service

NOTES AND NEWS

Dr. Thorne Deuel has been called to active service with the armed forces and has tendered his resignation from the office of Secretary-Treasurer of the Society. Acting under the powers granted in Article IV, Section 4, of the Constitution, the Executive Committee has appointed Waldo R. Wedel, Secretary, and Frederick Johnson, Treasurer. This news was received too late for inclusion in the last number although these changes were noted in the list of officers.

Aleš Hrdlička retired on March 31, 1942, from the position of Curator, Division of Physical Anthropology, U. S. National Museum, Smithsonian Institution, Washington, after thirty-eight years and eleven months of active service. Henceforth his title will be Associate in Anthropology. T. D. Stewart, who has been associated with this division since 1924, has been promoted to the curatorship and is now the administrative head of the division.

Dr. Hrdlička has arranged also to give up his editorship of the *American Journal of Physical Anthropology* at the end of the current volume year. He founded the *Journal* and has edited it continuously since 1918. Dr. Stewart, the present assistant editor, will serve as the new editor for a period of six years. The American Association of Physical Anthropologists will elect succeeding editors, and each year after 1943 will replace one of the four associate editors.

Although retiring from his two most important activities in the field of physical anthropology, Dr. Hrdlička will continue to occupy his old office in the Museum and will carry on his scientific research as well as serve in an advisory capacity. Dr. Hrdlička's past contributions to anthropology were enumerated, along with his bibliography, in a special volume of the *American Journal of Physical Anthropology* (Volume 26, 1940) honoring his seventieth birthday. This volume also gives details regarding the celebration of this event by the American Association of Physical Anthropologists.

Dr. Daniel F. Rubín de la Borbolla, Director, announces that the former Department of Anthropology of the Instituto Politécnico Nacional has now become the Escuela Nacional de Antropología, forming a part of the Instituto Nacional de Antropología e Historia. With the coöperation of the Universidad Nacional de México, professional training is offered in General Physical Anthropology, Archaeology, Ethnology, and Linguistics. The address of the institution is Escuela Nacional de Antropología, Moneda 13, México, D. F.

The Instituto Indigenista Interamericano announces that the *Boletín Indigenista* will appear six times a year during the months when *America Indígena*, the quarterly magazine, is not in press. Subscriptions to both journals are included in the single fee of $2.00. Interested persons may secure subscription blanks through the Editor's office, or may address Sr. Don Carlos Giron Cerna, Secretary and Director of Publications, Instituto Indigenista Interamericano, Orrosco y Berra 1-304, México, D. F.

Interested anthropologists may still obtain copies of the *International Directory of Anthropologists* (Section I; Western Hemisphere: Section II; Eastern Hemisphere) by writing to the Secretary of the Division of Anthropology and Psychology, National Research Council, 2101 Constitution Avenue, Washington, D. C. The price of the *Directory* is $2.00; either section may be obtained for $1.00.

It is with regret that we belatedly announce the death of Glover M. Allen on February 14. He was Curator of Mammals at the Museum of Comparative Zoology, and Associate Professor of Zoology at Harvard University, but it is not generally known that he was also an ornithologist of some repute, and at the time of his death was editor of *The Auk*. He had identified remains of birds and mammals secured from excavations carried on by many archaeologists and took keen interest in the distributional data that were forthcoming. His friendly coöperation, quiet humor, keen interest, and willingness to help will be missed by all who came into contact with him in any way.

On June 7, Dr. George A. Reisner, world-famous Egyptologist, died at the Pyramids of Gizeh where he had worked for more than forty years. The war did not stop his race against time and failing eyesight to reduce to a form available to others the notes that he had amassed, dictating from a hospital bed for a part of the winter. In Dr. Reisner's death the American school of archaeology looses one of its founders, for it was he who first laid stress on the importance of recording every detail observed in excavating at a time when museums were scrambling to outdo each other in the number or rarity of pieces. From Dr. Reisner's courses in Egyptology, given intermittently at Harvard, came the germ of the stratigraphic technique that was adapted and first used in America on a large dig at Pecos. His principles have since been accepted as sound, and have been put into practice in every archaeological field, both in the New World and the Old.

ERRATUM

Through some mischance a typographical error occurred in Eiseley's review of Hibben and Bryan's *Evidences of Early Occupation of Sandia Cave* after proof had been read by the author. In paragraph 4, page 415 of the April number of AMERICAN ANTIQUITY there occurs a sentence "Upon the faunal remains, however, this reviewer would venture a comment directed less at Hibben than at what seems a widespread and unfortunate trend toward giving the results of paleontological identifications with *gravity* and little emphasis upon the condition or quantity of the material upon which such identifications are based." This should have read " . . . giving the results of paleontological identifications with *brevity* and little emphasis. . . ." We apologize to the reviewer and to the author for any difficulties this regrettable error may have caused them.

ANNOUNCEMENT

The University of Montana is pleased to announce the formation of *The Montana University Publications in the Social Sciences* by recent action of the State Board of Education.

The following manuscripts are either in press or in process of editing. The fiscal organization of the University is such that it is not convenient to offer these monographs for sale. We wish to place these volumes in the proper hands, however, and offer to send them gratis to persons who express their interests by asking for them until the editions are exhausted. We would appreciate, however, having persons not on our exchange lists remitting the stamp values they find on the covers upon their receipt.

Due to the exigencies of war times and the uncertain military status of our staff, we are attempting to publish all completed or nearly completed manuscripts as soon as possible. This strain on our budget will make it necessary to publish the longer papers in mimeograph or lithograph. Papers whose illustrations are of scientific significance will be printed. For similar reasons, we would like to receive requests for any or all of these papers at one time instead of by separate announcement.

The following are ready, or will be within the next few months:

1. *The Hagen Site*, by William Mulloy and others.
2. *The Practice of Primitive War*, vol. I, by Harry Turney-High.
3. *Pictograph Cave*, by William Mulloy and others.
4. *Acculturation of the Milltown Finns*, by Gladys Pierson.
5. *Historic and Protohistoric Village Sites in the Yellowstone Valley*, by William Mulloy and others.
6. *The Practice of Primitive War*, vol. II, by Harry Turney-High.
7. *David Thompson's Journal*, by Catherine White.
8. *Montana's Production in 1941*, by R. J. W. Ely.

HARRY TURNEY-HIGH, *Editor*
Montana State University
Missoula, Montana

SOUTHWESTERN AREA

From February 1 to April 30, 1942, the Arizona State Museum in coöperation with the CCC-ID excavated in Ventana Cave on the Papago Indian Reservation in south-central Arizona under the supervision of Mr. Julian D. Hayden, formerly National Park Service-CCC archaeologist. Some 400 cubic meters of material were handled during this season and the excavations are now considered completed. The general outline of the stratigraphy as reported last year has been verified and certain problems were greatly strengthened by further evidence secured from the extensive stratified debris which reaches a maximum depth of five meters.

Briefly outlined, the deposits may be divided on the basis of genesis into two layers, each with subdivisions. The first and upper layer is midden material and therefore man-made, including two or more zones. The upper one to two meters carry pottery, representing the full range of Hohokam types as well as some others, and the lower two to three meters are rich in the grinding and chipped implements related to the two final stages of Sayles' Cochise culture on the one hand and to the early California desert groups on the other hand. Modern fauna occurred throughout the midden deposit.

The second and deepest deposit was nature-laid. Man frequented the cave at this time and some of his tools, charcoal, and bones of the animals he evidently ate, became mixed with the water-deposited volcanic debris which constitutes the bulk of the layer. All of this was securely cemented together by lime. The evidence suggests that this layer was put down during a wet cycle; which one has not yet been decided. The fauna includes horse, bison, sloth and tapir, and the complex represented by the implements is more nearly like Folsom than any other known early culture.

The cultural continuity is broken at the base of the midden layer which rests disconformably upon the deeper cemented volcanic debris. The physical and faunal differences above and below the disconformity are also marked and it may be inferred that this represents a considerable lapse of time with one or more culture stages missing.

The Society hopes to publish a preliminary report on the site in the January number of AMERICAN ANTIQUITY.

EMIL W. HAURY

SECOND ROUND TABLE CONFERENCE

The Second Round Table Conference on Anthropological Problems of Mexico and Central America, sponsored by the Sociedad Mexicana de Antropología, was held at Tuxtla Gutierrez, Chiapas, April 27 to May 1, 1942. The subject of the Conference was "Mayas and Olmecs," but discussion centered around the identity of the historical Olmecs and about the archaeological "Olmec" complex.

The Conference was especially significant for anthropology since it demonstrated, as did the First Round Table Conference, the possibility of attacking a given anthropological problem through the various branches of the science. Papers which were presented had been solicited by the program committee and were designed to attack the problem from the points of view of: (1) the Olmecs of the traditions and early sources; (2) the archaeological "Olmec" complex; (3) the "Olmec" physical type. The papers which were delivered under these heads were divided among the following persons:

I. The Olmecs of the Traditions
   1. Connection Between the Olmecs, Toltecs and Mayas, According to the Traditions: Wigberto Jiménez Moreno.
   2. Geographical Distribution of Culture Traits Attributed to the Olmecs by the Traditions: Paul Kirchoff.
   3. The Olmecs of the Historical Sources: Salvador Toscano.
   4. Linguistic Groups in Chiapas and their Historical Sequence: Jorge A. Vivó.
   5. Languages of the Popoloca-Mixtecan Stock and Their Relation to Macro-Otomangue: Roberto J. Weitlaner.
   6. The Relationship Between Totonac, Mixe-Zoque, and Mayance, or the Macro-Mayance Linguistic Stock: Norman A. McQuown.

II. The Archaeological "Olmeci" Complex
   1. Definition and Distribution: Alfonso Caso.
   2. Origin and Development of the Artistic Style: Miguel Covarrubias.
   3. Relation with Other Cultures
      a. Archaic: Eduardo Noguera. (Read by Jiménez Moreno.)
      b. The "Q" Complex: George C. Vaillant.
      c. Monte Albán: Jorge Acosta. (Read by Alfonso Caso.)
      d. Southern Vera Cruz and Recent Discoveries at La Venta: Matthew W. Stirling,
      e. Maya: Enrique Juan Palacios. (Read by H. Berlin.)
      f. Northern Vera Cruz (Tampico): Gordon F. Ekholm.
      g. Highland and Early Maya: Alfred V. Kidder.
      h. West Coast of Guatemala: J. Eric S. Thompson. (Read by Alfred V. Kidder.)
      i. El Tajín: José García Payón.
   4. Maya-Toltec Cosmology and Chronology: H. J. Spinden.

III. The Physical Type of Cerro de las Mesas: Juan Comas.

Jorge A. Lines came from Costa Rica to join the discussion and present evidence of "Olmec" influence in Costa Rica in the form of a jade figurine recently found in that country and certainly belonging to the "Olmec" style, now termed the "La Venta" style.

After the completion of Section I, Dr. Caso delivered a very brilliant summary of all the points that had been covered by the participants in that section. Following this summary, the archaeological papers were presented.

Tentative general conclusions could not be reached, but on the following points all participants agreed. *Archaeology.* It is proposed that the term "La Venta culture" be substituted for the former provisional term "Olmec," since the greatest number of traits belonging to this culture occur at this site.

Archaeological research in the Valley of Mexico, Michoacán, Morelos, Oaxaca, northern and southern Vera Cruz, Tabasco, the Petén, the Guatemala Highlands, and at Copán has shown that there is a cultural horizon which has been called the Archaic—the oldest yet known—with which the La Venta culture is associated. (Spinden objected that the La Venta culture is highly specialized and cannot be considered as an antecedent of other Middle American cultures.)

Investigations have shown four fundamental levels in Middle America as indicated:

BASIC TRAITS AND CORRELATION OF THE CULTURE HORIZONS IN MIDDLE AMERICA

	Veracruz and Tabasco	Peten	Valley of Oaxaca	Valley of Mexico	Basic Traits
IV (Mixtec-Puebla)	Cempoala-Cerro Montoso Tajín		Monte Albán IV–V	Aztec III–IV (Tenochca) Mazapa	Metals
III	Tajín	Tepeu	Monte Albán III B	Matlatzinca-Coyotlatelco Teotihuacán IV–V	Vases with painted human figures
II	Tajín	Tzakol Chicanel, Temple E VII sub (Uaxactun)	Monte Albán III A Monte Albán II	Teotihuacán II–III	Stelae Basal-flanged pottery
I (Archaic)	Tres Zapotes Lower II La Venta Tres Zapotes Lower I	Mamom	Monte Albán I	Ticomán Zacatenco	Writing, Dates, Colossal statues, Architecture

Although the La Venta culture is included in the lowest horizon, some of its traits persist into more recent cultures. The style of some of the clay figurines of Tres Zapotes lower I and II is related to that of the stone sculpture of this site, as well as to that of La Venta. The style of the clay figurines of the La Venta culture is closely related to types D, C III, and A of the Archaic found in the Valley of Mexico.

Sculpture of the La Venta style characteristically portrays two physical types; one with a broad flat nose and very thick lips, the other, with finer nose and more delicate lips. However, there are characteristics common to both that warrant placing them within one group. Apparently fat individuals are represented, hence there are certain constant features, such as rounded or pear-shaped heads, fat cheeks, thick necks, slanting puffy eyes with epicanthic fold, prominent chins, and chubby bodies. The people represented were apparently of low stature.

The traits of the La Venta culture include the following: very extensive use of grey-green, spinach-green, blue-green, or less frequently grass-green jade; seated or standing figurines; large cylindrical or spherical beads; circular and rectangular ear plugs; clay figurines of a number of types, (a) with raised buttons of clay in Tres Zapotes II style, (b) solid type with mongoloid eye, (c) "baby face" type with fat cheeks, (d) solid bearded type; pyramidal earth mounds set on rectangular platforms; colossal axes; plaque-axes; jade axes; masks with hollowed back; small cabochon masks; disks with representation of tiger-like mouth or face; pectoral plaques; plaque beads; palettes; replicas in jade of claws and clam shells; needles, spatulas and punches of jade; bow-shaped stones; spiral motif rare in decorative art; and an absence of feather ornaments.

To these general traits Dr. Stirling adds the following, so far known only from La Venta: altars, generally with a figure seated cross-legged in a niche at the front; colossal heads of the broad-nosed, thick-lipped type; stelae with figures in relief (bearded men); extensive use of natural columns of basalt; rectangular tomb made of basalt columns; sarcophagus in the form of a conventionalized jaguar, with rectangular cover; rectangular anthropomorphic limestone monuments; jade beads in the form of sections of bamboo; amethyst beads (one found); square carved ear plugs; great rectangular platforms surrounded with vertically-set basalt columns; elongated ellipsoidal mounds; and a tendency to orient sculptures and monuments north and south.

Physical Anthropology. Although examination of the scanty skeletal material from the lower levels of Cerro de las Mesas fails to substantiate the existence of the physical type that appears to be represented in the anthropomorphic La Venta art, one deformed skull from the level next above very closely parallels the typical La Venta human figures. It is suggested that a detailed study of the somatological characteristics of the La Venta figures be made, following in so far as possible the morphological criteria. The two physical types that are represented in the figurines may be designated as the short broad type and the tall type; in the first of these, the figurines with chubby bodies are included, in the latter, the individuals with long arms and legs.

Linguistics. Concerning the Macro-Otomanguean phyllum it appears that lexicographical similarities favor the inclusion of Mazatec in the Popoloca group which comprises Popoloca, Ixcatec, Chocho, and Mazatec; that Trique is closer to the Mixtec group than to the Popoloca, especially to the Mixtec language; that Cuicatec also is related to the Mixtec group and to Trique; and that Amusgo is provisionally tied to the Mixtec group.

A stock called the Macro-Mayance also takes shape. Definition of a Macro-Mayance stock was offered, which includes the Totonac-Zoque group, comprising Totonac-Tepehua and Mixe-Zoque, and the Mayance group.

Ethnography. When the occurrence of culture traits attributed to the Olmecs by early documents is plotted on the map, it will be found that these traits are divided geographically into two groups, the first occurring in the Lowlands, the second, in the Highlands. Sahagun is the only source for the Lowland culture traits, ascribable to the Olmecs of southern Vera Cruz and the adjoining portions of Tabasco. The *Historia Tolteca-Chichimeca*, Muñoz Camargo, and Ixtlilxochitl are those who mention the Highland group, referring to the Olmecs of Cholula and Tlaxcala.

In the Lowland group belong on the one hand, culture elements that are found among all the peoples of the Gulf Coast, southward from the Pánuco River, among the Maya of Yucatan, Chiapas and Guatemala, etc., and among people like the Pipil, Nicarao and Chorotega-Mangue who are the most southern outliers of Middle American culture. Among the traits within this area of distribution are: tattooing, different forms of head shaving, filed teeth, intentional tooth blackening, different forms of nose ornament, cranial deformation of different types, beards, the division of the year into eighteen months, the Volador ceremony, confession of sins to Tlazolteotl, tigers, etc., and mutilation of the penis (circumcision of children and self-sacrifice of blood).

On the other hand, some of the enumerated traits, together with a few others such as copper axes or *mactepuztli*, human heads or the skin of the face as trophies, the *quechquemitl*, sodomy as a recognized institution, five as a ceremonial number, etc., are found outside the mentioned zones in the region of the Isthmus of Tehuantepec.

The best example of the Highland traits consists of two weapons with associated distribution: the *macuahitl* or wooden sword-club with inset obsidian blades, and the *ichcahuippilli*, or quilted cotton armor.

The two other weapons which are also mentioned by historians as being used by the Olmecs of the Highlands, the bow and the shield, have a distribution much greater than the regions already mentioned, exceeding the bounds of Middle America. However, they are not found in Cuechtecapan and Totonacapan, the part of the Gulf Coast that appears to have preserved best that culture which is regarded as being associated with the most ancient phase of Olmec history.

History. An examination of the historical sources shows that the term "Olmec" means "inhabitant of the region where rubber grows," which is precisely in southern Vera Cruz and northern Tabasco. The name might be applied to a series of peoples of different ethnic and linguistic affiliations, occupying the zone either successively or simultaneously. These authorities clearly indicate that some Olmecs lived in the Highlands, and that some Olmecs lived in the rubber region of the coastal Lowlands. They also refer to different periods, some, more recent, and some, more ancient.

The La Venta culture is centered primarily in the region in which rubber grows, hence it must have been the culture of one of the peoples who in ancient times occupied this zone.

The most recent Olmecs mentioned in the historical sources seem to have been Mixtec and Nahua speaking groups. According to these sources they were living in two localities: (1) at Cholula at the time when the Tolteca-Chichimeca arrived; and (2) at Chalco when the Chalca-Totolimpaneca arrived. The Mixtec and Nahua speaking Olmecs may have been responsible for the pottery known as Aztec I and Cholula (Altar de los Craneos). This type of ceramics is also connected with the pottery of the Mixtec and that from Cerro Montoso.

As can be seen, the historical approach identifies the Olmecs of the historical sources as the "nahuatized" Popoloca-Mixtec; Jiménez Moreno went so far as to indicate that some of the recent Olmecs might have been responsible for the Aztec I and Cholula ceramics.

On the other hand, the archaeological La Venta culture can be clearly defined. Its pure art style and its characteristic traits, which can be identified from Monta Albán through the Highlands to Uaxactun in the Petén, as well as along the Gulf Coast, belong to the Archaic culture horizon. Evidence of the existence of any "La Venta style" physical type was lacking from the majority of the scanty skeletal material from the lower levels of Cerro de las Mesas, although one *deformed* skull from a level immediately

above these skulls is identical in form with the La Venta style of representations of human heads.

Ethnography shows that a group of traits linked with the Olmecs of the historical sources is distributed from the Gulf Coast of Vera Cruz on the north to the Pacific Coast of Mexico and southward as far as Nicaragua. However this group of traits cannot be connected in any way with the archaeological material of La Venta which belongs to the antecedent Archaic culture horizon, and there appeared to be no links by which the two could be connected. The reconstruction of the history of the Olmec region put forward by Jiménez Moreno appeared as an hypothesis which should be discussed further, principally in regard to the intermediate culture horizons, because the necessary minute details proving archaeologically a connection between historic and prehistoric tribes was not yet available.

Dr. Kidder suggested that the results of Jiménez Moreno's researches be published in *Theoretical Approaches to Problems* in order that the hypothesis might be better known and widely discussed with the hope that future excavations might add the missing data. The Conference approved of this suggestion and accepted the work of Jiménez Moreno as an hypothesis.

The Conference then adjourned, leaving the identity of the authors of the La Venta culture still unsettled, after agreeing that the subject of the next Round Table Conference would be anthropological problems of the north of Mexico in relation to those of the Southeast and Southwest of the United States. The date and place of the meeting was left to be decided at a later date. The following were appointed to the Organizing Committee: Donald D. Brand, Daniel F. Rubín de la Borbolla, Gordon F. Ekholm, Alfred V. Kidder, Ignacio Marquina, Wigberto Jiménez Moreno, John R. Swanton.

A full report of this conference will be found in *Mayas y Olmecas* published by the Sociedad Mexicana de Antropología.

THIRD ROUND TABLE CONFERENCE

The organizing committee announces that the Third Round Table Conference will be held in northern Mexico, with preference Durango, or Tamulipas, during the early or late summer of 1943. The subject will be "Northern Mexico and the Relationship Between the Cultures of Middle America and Those of the Southeast and Southwest of the United States." A tentative program involves: I) Introduction: (1) An outline of the problems, (2) Geographical setting, (3) A discussion of Early Man in the area; II) Northern Mexico in respect to the three neighboring areas: (1) Physical anthropology, (2) Linguistics, (3) Ethnology and history, (4) Archaeology; III) Relations between Middle America and the two areas in the United States: (1) The Southeast, (2) The Southwest, (3) Correlations between Middle American chronology and Southwestern dendrochronology.

BOOK REVIEWS

Anasazi Basketry, Basket Maker II through Pueblo III, a Study Based on Specimens from the San Juan River Country. EARL H. MORRIS and ROBERT F. BURGH. (Pub. 533, Carnegie Institution of Washington, 66 text pages, and 43 full pages of illustrations at end of text. Washington, D. C., 1941. Price $1.50 paper, $2.50, cloth.)

Again we are indebted to Earl Morris for a magnificently useful presentation of source material. With the collaboration of Robert Burgh he has produced a technical analysis of San Juan basketry which provides extremely useful comparative material for Southwestern archaeologists and a detailed account of manufacturing techniques for archaeologists and ethnologists in general.

In the general field of primitive arts and industries all teachers of the subject have keenly felt the lack of good source material on techniques in the textile arts. To them this paper will be extremely useful in course and laboratory work.

The study is presented with admirable clarity and there is none of the difficulty often experienced in separating the speculations of the authors from what we call the factual material. The presentation is in three parts; technology, forms, and decorative designs, magnificently illustrated by 127 drawings and 249 photographs. In addition, there is an excellent map of the San Juan country and a glossary with full definition of forty technical basketry terms used in the report. The latter are illustrated graphically.

Throughout the descriptions of technique, form, and design, the authors present lists or tables which show the distribution of features discussed, in so far as possible, in the standard archaeological periods of the Pecos Classification of Pueblo cultures. In the section on techniques, we are given first a simple and useful classification divided five ways into techniques used on the wall, the center, the rim, the splice, and the mechanics of decoration, with the distribution of each subdivision of the five in time and space in the San Juan. The authors found surprisingly few changes in the major features of coiled basketry from Basket Maker II to the close of Pueblo III. The two dominant techniques —uninterlocked stitches on two-rod-and-bundle foundation, and bunched and interlocked stitches on one-rod foundation—lasted throughout.

Form is divided into two classes, coiled basket forms and ring basket forms, with subdivisions under each. The authors found no ring baskets in Basket Maker II but did find that technique in Basket Maker III although it has previously been listed as first occurring in Pueblo I. They believe shape to be of unusual importance because of its relative degree of independence of structural technique and materials.

Design is discussed by cultural period, using periods in a descriptive sense in terms of associated artifacts rather than as arbitrary calendrical divisions. Designs were produced by mass variation in structure and by the use of color without structural change. Colored designs were achieved in three ways: by the use of stained splints of the same material as the rest of the splints; by the use of splints of different materials in natural contrasting colors; and, in one instance only, in Basket Maker III, by the use of mineral colors, red and black, in addition to stained splints. In the earliest period, Basket Maker II, the color is black. In Basket Maker III, red is added to produce a polychrome. The Pueblo III baskets, for the most part, revert to the black alone.

To me the most important single gain from this paper lies in the conclusiveness with which it demonstrates that the earliest pottery designs in the San Juan, those found on the Basket Maker III pots, are the same as those on the Basket Maker II and Basket Maker III baskets. Far too many Southwestern archaeologists have recently considered the problem of pottery design as restricted to pottery alone without taking into account the possibility that many of these designs may very well have diffused about the area

before the appearance of pottery at all. Furthermore, the authors point out that in Pueblo III times, when pottery had become very important as a design medium and when sufficient time had elapsed to allow pottery design as such to develop, basketry, in turn, bears designs derived from pottery.

The report is printed on the standard large format of the Carnegie Institution of Washington, a size very suitable for archaeology. Unfortunately, the paper cover is attached by means of a heavy cloth tape which is so much stiffer than the paper to which it is affixed that in two weeks of use the cover of my copy has pulled away from the body of the book. I am in hearty agreement with current attempts to cut costs of our publications, but it seems to me that in some cases we go too far, particularly in this instance in which we are dealing with a source book of signal importance which must be used continuously by the workers in the field.

J. O. BREW
Peabody Museum, Cambridge

Winona and Ridge Ruin, Part I, Architecture and Material Culture. JOHN C. MCGREGOR. Background by HAROLD S. COLTON. Appendix I, "Turkey Tank Pit House," JOHN C. MCGREGOR. Appendix 2, "Plant Materials from Winona and Ridge Ruin," VOLNEY H. JONES. Appendix 3, "Skeletal Material from Winona and Ridge Ruin," KATHARINE BARTLETT. (Museum of Northern Arizona, Bulletin 18, 309 pp., 82 fig. including 4 maps, 17 tables. Northern Arizona Society of Science and Art, Flagstaff, February, 1941.)

Several seasons of survey and excavation work within an area of six square miles adjacent to Winona Station, some seventeen miles east of Flagstaff, Arizona, furnished the material embodied in this report. The location was peripheral to several sources of diffusion for Southwestern cultural influences with a resultant mixture of traits indicated. This suggested a series of interesting problems which McGregor and his co-workers set out to solve. The evidence leads them to conclude that although located on the plateau the remains are not Puebloan. They believe that migrations coming from a southwestern direction and from the east, the latter possibly an adjacent locality, met and settled in the Winona section. Each for a time retained its main characteristics, then a peaceful fusing of the two produced the succeeding stage. This in turn was modified by new influences coming in from the east. Subsequent developments took place outside this immediate section and the people ultimately withdrew to parts as yet unidentified.

The several categories were determined on the basis of houses, pottery and other material culture types. Dendrochronology and trade objects previously dated elsewhere show that the major occupation of the section was between 1000 and 1175 A.D. Most of the cultural changes took place in the interval from 1070 to 1130, a period of sixty years. The rapidity with which developments occurred is attributed to the fusion or mixture of cultures and peoples. Environment is responsible for the location of this particular "melting pot" near Winona. The eruption of Sunset Crater and the attendant effect on the surrounding area, as previously elaborated by Colton, and the evidence for a better and more constant water supply in the eleventh century are the factors believed responsible for the conditions that attracted agricultural peoples to the district. Discussion of this phase of the problem constitutes an extremely interesting part of the report.

The general cultural stage represented by the remains in the Winona section is thought to be late Pueblo II and early Pueblo III of the Pecos Classification, chronologically a lag when compared with Anasazi developments farther east. The classification and

nomenclature used, however, is that of the Colton system. The group coming in from the southwest is believed to be Hohokam in origin, via the Verde branch, that from the east a Mogollon derivative through the Sinagua branch. In the Winona section the Hohokam offspring is designated the Winona focus, that from the Mogollon the Angell focus. The subsequent stage growing out of the mixing of the two is called the Padre focus and the modified form of the latter resulting from new infusion from the east carries the name Elden focus. The term focus tends to be a little confusing in that it is used in the sense of Gladwin's "phase" rather than its more generally understood meaning. Here chronologic-genetic determinants are employed instead of the purely statistical method. The assigning of the same structure to two different foci, one later than the other, suggests that the author wasn't altogether certain about the status of a focus.

On the whole the stage distinctions are clear. Yet it is somewhat disconcerting to read that the cultural manifestations in general are the Sinagua branch of the Mogollon, that they were greatly modified by an invasion from the Verde branch of the Hohokam, that the subsequent mixture produced a new focus of the Sinagua branch of the Mogollon, and the latter after being changed by further influences from the east becomes another focus but still is the Sinagua branch of the Mogollon. Furthermore, there is admission of uncertainty as to just what is definitely Mogollon. This reviewer no doubt has failed to grasp a proper understanding of the nuances of the classification system, but it would seem that when something is "greatly modified" by additions from an entirely different source the resultant mixture would not be basically the same as one of the original elements. Some indication of the hybridism, by the nomenclature, would be helpful.

The report considers in detail the subjects of the location and geography of the section, excavation methods, dates, cultural stages, pottery, structures, stone objects, shell, bone, horn, basketry, textiles, wooden objects, food and other raw material, plant materials, disposal of the dead, and skeletal material. These give a good picture of the scope of the work and of conditions in the Winona section during its aboriginal occupation. The various types of objects are tabulated according to foci and in a general summary a number of traits are listed to show the differences between foci. In some cases, there is little distinction, others show marked variation, and some do not occur in all four stages. Some of the examples chosen as characteristic might be questioned. The house type given for the Winona focus was the "only truly Hohokam-like structure found in the entire work" and it is noticeably different from the other structures in the Winona group. As a matter of fact, on the basis of the printed data it would be difficult to choose any one and call it typical. The identification of certain ubiquitous forms of arrowheads and stone drills as definitely Mogollon is rather startling and, if correct, means that there will be need for revision of ideas about some of the Plains and other cultures heretofore regarded as completely untouched by any Southwestern influence.

In the discussion of trait comparisons, mention is made of the fact that all of the traits found in the Winona culture were considered, without division into foci, and it was found that varying numbers were identical with those from certain Anasazi centers, from the Mogollon, Mexico, and Middle America. If the total number of Winona traits is given the reviewer missed it. It would be interesting to know what percentage of the whole is represented by the fifteen identical with those from Pueblo Bonito, the eleven from northeastern Arizona, the sixteen from the Upper Gila. Also, how many were distinctly and definitely Winona. Even more significant would be the relations by foci and a statement of the number common to all.

Interesting views are presented in the consideration of influences bearing on Winona developments. One of these is that despite the Pueblo type of architecture and pottery in the Elden focus, the Pueblo culture contributed very little to the complex. This pos-

sibly is true for the earlier foci, although the heavy showing of Anasazi sherds in the analysis diagrams suggests otherwise, but hardly seems to hold for the final stage. In this connection, it is pointed out, however, that the influences are from the Chaco cultures and they are regarded as Mogollon derived. If the Chaco cultures are Mogollon and not Pueblo, then obviously there is no Pueblo influence at Winona. This view poses a new problem. How are we to reconcile this identification of typical Anasazi remains as Mogollon, implying that both belong to a single broad class, call it what one will, with the main theme that the Mogollon and Anasazi were distinct cultures? Workers in the Mogollon area have noted a marked Anasazi influence in the later stages of the Mogollon and it is possible in the present instance that part of the difficulty lies in an identification as Mogollon of materials, some of which may be wholly Anasazi, from a Mogollon-Anasazi mixture.

Criticism and defense of various methods of classification have been rampant in recent years. In evaluating a piece of work, we perhaps should keep in mind the thought that no system is entirely satisfactory and that it is the archaeologist's privilege "to adopt such classification and take such points of view as he believes will best serve his particular purpose," provided the evidence is not selected and all of the data are put on record in such a way that others may derive full information from them and if necessary translate the subject matter into terms of their own preference. This in the main McGregor has done. Some no doubt would prefer more detailed treatment of certain features, especially for comparative purposes, others may regard certain minutiae as superfluous. In general, however, the report is a good presentation of the results obtained from investigations in an area where there was a meeting and mixing of diverse cultural influences. That the sources from which these influences stemmed were in all cases those suggested by the author is a matter of opinion. McGregor states that further investigations are planned and these no doubt will clear up some present uncertainties. It will be interesting to know about later twigs (foci) on the branch and perhaps we will also be enlightened about the stem between the root and the branch.

FRANK H. H. ROBERTS Jr.
Bureau of American Ethnology
Washington, D. C.

The Utilization of Yucca, Sotol, and Beargrass by the Aborigines in the American Southwest. WILLIS H. BELL and EDWARD F. CASTETTER. (Ethnobiological Studies in the American Southwest, No. 7, pp. 74. University of New Mexico Bulletin, Biological Series, Vol. 5, No. 5. December 1, 1941.)

This is the seventh of a series of monographs on the ethnobiology of the Southwest prepared by these authors and other collaborators. This number is concerned with the manner and extent of Indian utilization of yucca (*Yucca* spp.), sotol (*Dasylirion* spp.), and beargrass (*Nolina* spp.). These typical desert and semi-desert plants were of great economic importance due to their wide accessibility and the diversity of use made of them. The authors consider yucca to have ranked foremost among the wild economic plants of the area, bearing out the remark made by Charles Francis Saunders some years ago that yucca has been to the desert Indian what the date palm has been to the Arab.[1] The fruits, flower stalks, flowers, and crowns of these plants furnished food. Thongs, cordage, sandals, matting, basketry, cloth, nets, headrings, straps, cradles, brushes, and many minor items were made from the fibrous leaves. The roots contain a saponaceous material esteemed for washing the hair and clothing. Various parts of the plants found other miscellaneous uses. Sotol and beargrass were less suitable than yucca for most of these uses and were also more restricted in range, hence they were less important.

[1] "The Yucca and the Indian." *American Botanist*, Vol. 17, pp. 1–3, 1911.

Data concerning the uses of these plants were drawn from the literature of ethnology, archaeology, and botany, supplemented by information gathered by the authors especially from the Rio Grande pueblos and from the Papago. The task was an extremely ambitious one and an impressive amount of literature was covered (168 bibliographical items). Naturally even this does not include all of the voluminous Southwestern literature and one might remark upon and cavil over omissions, but it is doubtful that the survey of additional literature would have altered their conclusions in any appreciable way. The format in general is good but would seem to merit a table of contents.

The authors must have used much of the data, particularly that from archaeology, with considerable mental reservation, although this seems not to have been expressed. There are almost no archaeological reports on the Southwest in which identifications of fibers based on examinations under a microscope by a competent person are offered. Most must be considered as little more than guesses, or at best as judicious non-technical opinion. As Bell and Castetter had no better source material upon which to draw, their discussions of the archaeological history of these fibers must be taken with appropriate reserve. The archaeologist can be vindicated of responsibility to a large extent, as no satisfactory techniques or keys for the identification of native North American fibers have been available, and too few persons are qualified in fiber determination. It is gratifying to know that there is interest and activity in some quarters toward alleviation of this condition.

In the course of their ethnobiological work, the authors have attained considerable competence and poise in things anthropological. Although they are biologists and this paper was published in a biological series, it will be of more interest and value to anthropologists than to botanists. Emphasis throughout is on the uses of these plants by man, rather than on the plants themselves. There is noticeably less space given to plant descriptions and discussions of ranges than in their earlier paper on the agaves (No. 6 of their series), however, the need for these is obviated to some extent by McKelvey's recent monograph on the Southwestern yuccas.[2]

The authors can well be proud of having undertaken a large and difficult task and having carried it through to produce an exceedingly useful and valuable reference compendium. We look forward to the appearance of future numbers in their series.

VOLNEY H. JONES
University of Michigan

Southwestern Archaeology. JOHN C. MCGREGOR. (John Wiley & Sons, New York. Chapman & Hall, London. pp. 413, 1941. $5.00.)

The need for a new general book on Southwestern archaeology has been cried loud and far during the last ten years. *Southwestern Archaeology* is avowedly written in response to that cry. The urgency of the need requires no additional testimony. Students have long looked forward to Dr. McGregor's book. The testimony here presented, on the basis of the most careful reading I have ever given a text book, is the opinion that this book does not fill our need. It is a great disappointment.

Such a statement is not made lightly, but after a month of thought and even of worry. The book contains a considerable amount of the factual material of Southwestern archaeology, more indeed than has ever before been presented in a single volume. This should be eminently desirable and useful and would be if it were not for the conceptual scheme in which it has been set. There is a great temptation, when something like this appears, to pass it by for the sake of peace and quiet, realizing that in the long run the matter will be ironed out. Such a course, however, is dangerous, particularly when one has to deal with a textbook. Statements in textbooks are absorbed by students who have

[2] Arnold Aboretum, 1938.

not sufficient knowledge to evaluate them. This produces a body of intrenched dogma which can be dislodged only by decades of hard and unnecessary work, wasting the time of many men who should be more profitably employed. Dr. McGregor's book is presented as a textbook for beginners. Actually, it can be read without serious danger only by those who are thoroughly familiar with all aspects of Southwestern archaeology.

This book represents another of what we may call "one-way arguments," which seem to be a speciality of the Southwestern field. By one-way argument I mean the forceful presentation of a single theory, at the same time ignoring all other theories which the evidence supports or, at least, does not bar. Such is not scientific procedure. It is all too easy to liken Southwestern archaeologists to a body of salesmen hawking their wares to the exclusion of all competitors. To me, scientific archaeological publication involves the presentation of data followed by the analysis of that data in terms of all practical hypotheses. After such scientific presentation, the writer may then tell us which hypothesis he believes most probably to be true and the reader may agree or not, as he sees fit. With that there can be no quarrel. Such procedure is not that of "moss-backed conservatism"; it is in fact much more imaginative than the "one-way" presentation. And despite statements to the contrary, this can be done, and done simply and clearly, even in a textbook.

McGregor's book is not only unscientific, in the terms described above, but it is expressed in a dogmatic style, startling and anachronistic in the year 1942. The argument is often heard that elementary texts must be dogmatic. This is not so. Such pedagogic casuistry is particularly false in archaeology, where the "elementary student" is usually in college or graduate school. If our problems can not be presented frankly to such students we had best retire to our museums and stop trying to teach.

Before tackling the main issues raised by this book we must dispose of a point already brought up by another reviewer. In the December, 1941, issue of the news letter of the Clearing House for Southwestern Archaeology the statement has been made that the title is a misnomer. Such is indeed the case. This is a book on the archaeology of the state of Arizona with a small amount of additional material on the rest of the Southwest. The latter was apparently hastily compiled with insufficient research in an attempt to justify the title and to bolster the publisher's claim that it is "the most important contribution, of a general nature, on Southwestern archaeology since Kidder's work of the late twenties." Dr. Kidder's book was published in 1924. Southwestern archaeologists will be able to spot the other inaccuracies in the quoted statement.

The illustrations, as well as the letter-press, are drawn mostly from Arizona. There are 82 photographs, 57 from Arizona, 6 from New Mexico, 4 from Colorado, 1 from Utah, and 14 unidentified as to state, but apparently also from Arizona. Two of the last group seem to give the show away by the use of the term, "the state," without more specific designation. For example, on page 4 we find the caption, "This one was found in the northeast corner of *the state*." My italics emphasize this revealing editorial oversight.

To a smaller extent a similar criticism can be made of the maps. In the "General Summary" at the end, the following statement occurs: "By way of an aid to the review of the prehistory of the Southwest, a second chart, Fig. 162, has been prepared. This indicates the culture centers and areas of influence which existed at the various periods indicated." Upon turning the page it is discovered that Fig. 162 consists of nine diagrams representing various chronological periods of the cultures of the state of Arizona.

All this, however, could be overlooked if we had in the book a clear, unwarped statement of the present condition of Arizona archaeology, but we haven't. From now on I shall, for the most part, let the book speak for itself, through quotations. In all cases the italics are mine, to emphasize the points raised.

The worst difficulty encountered by McGregor was the problem of basic cultures. No

formal agreement as to basic cultures in the Southwest has ever been reached and very few attempts have been made to deal with this classificatory problem. McGregor's handling of it is at best confusing. His attempted definition seems of little practical use. He describes a basic culture as " . . . the base or foundation upon which later cultures have been built. Thus a basic culture might be defined as the earliest definite culture from which others may be traced. To do this with accuracy it is necessary to be able to show that later people are definitely, even genetically, related to the first or earliest well-known group." Yet with no more precise definition he proceeds to use the term throughout the book.

The confusion develops when the reader attempts to discover McGregor's basic cultures. On page 126 we read: "Thus it would appear that there are only *two* basic cultures in the Southwest, one which gave rise to the Hohokam and Mogollon and perhaps to Patayan, and the other which formed the Basket Maker and Pueblo"; and on page 362, " . . . there are *at most two* basic cultures from which the rest appear to have developed. . . . The first of these is the Cochise Culture. It is the earliest clearly understood culture found in the southwest proper. . . . The second . . . is Basket Maker."

The statement that the Cochise culture is "clearly understood" is sufficiently surprising (certainly Sayles and Gladwin make no such claim) but on turning back to page 11 we find, "By about A.D. 400 *three* basic cultures, or tribes of people, were well established in the Southwest." And two pages further on we read, "Three hundred years later, or about A.D. 700, the same three groups were still represented in the Southwest, but were certainly, at least by this time, augmented by the Patayan Culture to the west along the Colorado River."

Then, finally on page 125 appears the statement: "The present tendency is to recognize *four* basic stocks or roots in the Southwest. Actually it would appear that there is still considerable uncertainty in the designation of basic cultures or roots." The last sentence is true, beyond doubt, and the variable use of the term in this book does not help to clarify the situation.

One is tempted at this point to swell the mounting total of basic cultures by the mention of Navaho, Apache, Ute, and Paiute. But this is perhaps unfair. By definition, archaeology in the Southwest does not include the "wild tribes." They are barely mentioned in this book entitled *Southwestern Archaelogy*. Published accounts of archaeological excavations of their sites are not mentioned at all. On the other hand, the Spaniards were hardly a "wild tribe" and their influence was rather extensive. But that, too, is not archaeology; it is too recent. There are published accounts of archaeological excavations of Spanish buildings at Pecos, Quarai, Gran Quivira, Abo, Tumacacori, and others. They are not mentioned at all. From both anthropological and historical points of view the effect of these Indian and European impacts upon the villagers of the plateau and the Gila basin was tremendous. There is an increasing tendency among anthropologists and others to criticise archaeology as limited to the verge of sterility. I fear the omission indicated above, as well as the general tone of this book, may be a case in point.

The difficulty over basic concepts arises mainly from McGregor's attempt to establish the Mogollon as a basic culture, however that term may be defined, in the absence of sufficient evidence. Archaeologists will be wise to remain open-minded on the subject of the Mogollon. All that is here emphasized is that it has not been established as a "basic culture" beyond peradventure by the existing evidence. Yet McGregor, in a textbook, continually treats it as an established fact. The barrier of the lack of distinctive traits is still impressive. In the list of Mogollon traits given on page 126 there is not one which does not occur also in either Pueblo or Hohokam or both. The distinctive features of Mogollon pottery are mentioned elsewhere but this is hardly enough for a basic culture. As will

appear presently, McGregor apparently realized this, for he has discarded as useless because of cultural impurity even the little we do know about the Mogollon. His treatment of the Mogollon is by far the most peculiar and least complimentary it has yet received. Even Judd's pithy comment that it is an illegitimate seeking a father at least allows it a body. To McGregor, apparently, it is quite incorporeal.

The theme of the Mogollon discussion is stated on page 8: "From them (the Mogollon) came style and fad influences, to shape and direct other people and their histories. Later their own vitality became exhausted, and they were in turn influenced by the very groups they had helped to form." This may be true; no one can now prove that it is not. But McGregor does not prove that it is, although he reiterates it in many forms throughout the text.

McGregor is one of the very few archaeologists of national repute who still maintain that all good things in the Southwest stem from the Mogollon. Haury, who first defined and who best understands the Mogollon, is far from this extreme position. One of the tragedies of McGregor's book is that the factual material given in it, taken by itself free from his interpertations, constitutes the strongest argument which has yet appeared against the probability of this claim. Yet, after presenting as good a refutation of his theory as our present knowledge permits, he persists in holding to it.

We have, however, a strong indication that McGregor feels the uncertainty of his position and the lack of evidence for it. The evidence is so weak that he finds it necessary to throw out entirely the Mogollon as we know it at present. On page 191 he maintains that *all* the sites now called Mogollon "lie outside and to the east of the main portion of the area believed to have been principally the home of the Mogollon people." His map, Fig. 66, shows them all to be peripheral geographically and his text describes them as peripheral culturally. The "homeland" sites are unexcavated and unknown. Thus McGregor's Mogollon appears as a complete postulation. The little body which it had, however ephemeral that may have been, has now been taken away entirely. This is rather an unstable position for the reputed cultural leaders. We can not say that this new theory is incorrect. In fact we can say so little about it at all that we may properly ask why, in the absence of evidence, it should appear in a textbook of Southwestern archaeology.

Even the negative nature of the postulated Mogollon "homeland" is open to criticism as to fact. It is not a void, as presented. W. S. Fulton and his assistant, Carr Tuthill, have made extensive excavations in this area. Their published reports of the Dragoon sites[1] provide extremely interesting and valuable data pertaining to Mogollon and Hohokam. This work is not mentioned by McGregor.

One of the greatest obstacles encountered in the book was the dating of the Mogollon. If the earliest dates claimed for it could be made to stand, then the imputed great influence upon other cultures could be more easily demonstrated. Unfortunately for that argument the known dates of Mogollon equate nicely with Basket Maker III and Pueblo I. In this book the seventh-century dates from Haury's Forestdale sites are not referred to and the earliest date given in the Mogollon chapter is 900 A.D. McGregor then projects Haury's finds back 400 years, using methods which he himself severely criticizes elsewhere. The result is still well within the Basket Maker III range. In view of this, the unqualified statement on page 11 that "The Mogollon culture proper was well established by about the time of Christ" seems very unwise.

The question of the origin of the Mogollon is handled in a manner which adds to the confusion. McGregor apparently accepts as established the suggestion in the Sayles and

[1] Fulton, W. S., 1934–1938. "Archaeological Notes on Texas Canyon, Arizona." *Contributions from the Museum of the American Indian, Heye Foundation.* XII, Nos. 1–3. Fulton, W. S., and Tuthill, C. *An Archaeological site near Gleeson, Arizona.* Amerind Foundation, Inc. Dragoon, Arizona, 1940.

Antevs report that Cochise was the direct cultural antecedent of the Mogollon. This idea was merely presented as an interesting probability by Gila Pueblo. In fact Sayles points out similarities between Cochise and Basket Maker stone implements, suggesting in sound scientific manner that a good argument could be made out along those lines, as well. No mention of this possibility is made by McGregor. Here, as elsewhere, the absence of critical and inclusive discussion is unfortunate.

Passing upward in the time scale we find the following statements. On page 13: "Hohokam Culture, flourishing in the desert section, had become quite definitely differentiated from its *parent* culture, Mogollon." Yet on page 129 we read that, "The staff of Gila Pueblo has been searching for the origin of the Hohokam for several years, and as a result located and identified the Mogollon culture, but has *not* as yet *found the source of the Hohokam.*" The latter statement occurs on the page opposite a chart showing the Hohokam as derived from the Mogollon.

Throughout the book McGregor at one time accepts and at another time rejects Gladwin's extreme early dating of the Hohokam (now abandoned by Gladwin). For instance, on page 135 he says that he will follow a date of about the time of Christ for the beginning of Hohokam, while the charts on pages 133 and 182 use the old Gladwin date of 300 B.C. With regard to the Gila Pueblo dating, on page 133 he says that Gladwin "has made a very convincing case" and on page 134 he inserts a short critical argument to show the reverse.

A number of very reasonable statements are made about the Mogollon. On page 125 he says, "A good deal is known of the remaining roots (including Patayan), though probably the *least* of *Mogollon*, for only a few Mogollon sites have thus far been dug" (and these few, according to McGregor, are not "true Mogollon"). On page 312 he says that Mogollon culture is "still in the first stages of examination." Yet in his conclusion on page 371 he maintains that "From all present indications Mogollon Culture was the first . . . strong influence in the development of the Southwest." This may be true, but the evidence he presents certainly does not show it.

The book abounds with dogmatic statements, inaccurate statements, and contradictions. A few of these have been quoted already; a few more will, I believe, suffice to justify the criticism. On page 320, describing Pueblo III (*1100*–1300), McGregor writes, "No basic additions or alterations were made in the general culture during this period." On page 321, describing Pueblo IV (*1300*–1600), he says, "General culture showed almost no changes from that of the preceding period." In other words there was little noteworthy change on the Plateau between Pueblo II and the coming of the Spaniards at the end of Pueblo IV, a statement strange enough in itself. Yet on page 326 he writes, "By now it has become apparent that two of the most important periods in Southwestern archaeology are A.D. *1100* and *1300*. Both these dates mark *radical cultural upsets* in the plateau and desert areas."

Again, speaking of the Salado, a movement of a Pueblo group down from the Plateau into the Gila Basin, which he dates at 1100 to 1450 A.D., he says on page 334. "The stone axe is uniformly of the three-quarter groove type . . . undoubtedly a trait *taken over* from the Hohokam people with whom the Saladoans were in contact." But, previously, describing Pueblo III (1100–1300) on page 228 he says, "Axes are predominantly of the three-quarter-grooved type, the only full-grooved forms occuring in the San Juan area." And on page 264, describing the Pueblo II culture on the plateau for which he gives a beginning date of 900 A.D., well before the Salado movement, he says, "The three-quarter-grooved axe was by now quite *well established* in the plateau area."

On page 126, discussing the Baskemaker he says, "The physical type was long headed." On page 211 we read, "the physical type of pure Basketmakers is not well known."

Errors in fact also appear. The chart on page 322 shows no Basket Maker II in the Mesa Verde area although Dr. Kidder has published a paper on Basket Maker II remains on Mesa Verde itself.[2] The chart on page 323 shows pottery beginning in the Plateau area at approximately 675 A.D., despite the numerous sites dated much earlier, in some cases centuries earlier, in which pottery has been found.

On page 126, describing the pottery of the Mogollon, McGregor says, "They also coiled much of it, but made some by the paddle and anvil process." Beginning with the excellent publication by Gifford in 1928,[3] which pointed out differences between the Plateau and the Gila Basin, it has been emphasized time and again that the paddle and anvil process was a finishing technique applied to *coiled* pottery in some parts of the Southwest in place of scraping.

On page 225 he reverts to the old theory that the subterranean pit house and kiva developed from the Basket Maker slab-lined storage cist. Yet it has been ably demonstrated in numerous publications by Roberts, Morris, Martin, Haury, and in the reports of the extensive excavations of the University of New Mexico in Chaco Canyon, that the slab cist developed into the contiguous rooms which comprise the above-ground portions of a Pueblo. This process is described in detail in the literature with step-by-step illustration of excavated buildings.[4]

In fact the whole treatment of house types in the Pueblo I chapter is inexcusable. The reports indicated in the paragraph above, which constitute the source material for this period on the plateau, have been for the most part ignored. Dr. McGregor seems to have stumbled into the all-too-common pitfall of those who believe that every period must have a *single* house type. The concept of a number of different house types, even at a single site (a situation characteristic of most cultures with any degree of complexity), would have aided materially here.

All of this indicates a lack of familiarity with the literature which compares poorly with the pretense of the title. Neglect of source material is emphasized by a few cases where statements might have been admirably supported by reference to well-known publications yet the citation given is in some such form as, "Dr. Cummings describes in his classes."

One of the most notable omissions is the paucity of reference, in the discussion of early man, to the detailed work of Roberts, Bryan, and Ray at Lindenmeier and to the excellent critical discussions by Malcolm Rogers of the situation in the Mojave desert. In fact there is no competent discussion of the all-important geological factors so essential to the problem of dating early man in the Southwest.

Unfortunately there are many other points to which exception can and will be taken. I shall list no more of them. For, after all, the main difficulty with this book does not lie in these specific items. Its glaring fault is the continuous bald statement of *one hypothesis only* in highly controversial matters. These statements are usually clothed in such positive terms that unwary students are given no indication that they are not dealing with established and demonstrable fact. "Theirs not to reason why. . . . "

J. O. BREW
Cambridge, Massachussets

---

[2] Kidder, A. V., 1923. "Basket maker caves in the Mesa Verde." *El Palacio*, Vol. 15, No. 10.

[3] Gifford, E. W., 1928. *Pottery-making in the Southwest*. University of California Publications in American Archaeology and Ethnology, Vol. 23, No. 8.

[4] One of the best demonstrations of this is in Roberts' article on Pueblo house types in the Hewett memorial volume.

An Archaeological Survey of Pickwick Basin in the Adjacent Portions of the States of Alabama, Mississippi, and Tennessee. WILLIAM S. WEBB and DAVID L. DEJARNETTE with additions by WALTER B. JONES, J. P. E. MORRISON, MARSHALL T. NEWMAN, CHARLES E. SNOW, and WILLIAM G. HAAG. (pp. 536, 316 plates and 2 maps. Bureau of American Ethnology, Bulletin 129, Washington, 1942.)

This herculean report covers three years' excavations by the TVA in the Pickwick Basin of the Tennessee River. The importance of this work cannot be overstressed, indeed it may be said that most of the recent progress toward a synthesis of Southeastern archaeology has been made possible by advance knowledge of these excavations.

In addition to the individual site reports and general conclusions by the principal authors, there are separate papers on the geology, by Walter B. Jones; on the mollusks, by J. P. E. Morrison; on the physical anthropology, by Marshall T. Newman and Charles E. Snow; and on the pottery, by William G. Haag. This review is confined to the archaeological and pottery sections.

The merits of the work, considering the difficulty of presenting an immense body of excavation data in a single volume, are so out-standing and impressive, that I shall be excused for dwelling on what seem to me to be its faults. These lie almost wholly in the domain of interpretation and are the result of mixing the stratigraphic and analytic (McKern) methods. In spite of all that has been said to the contrary, I believe that the two methods cannot be harmonized, one must give way before the other. It is usually stratigraphy that gives way. So here, with one notable exception which I shall refer to with enthusiasm presently.

The report covers 19 site excavations, as follows: 9 shell middens, 5 Copena burial mounds and a village site which may have been Copena, three domiciliary mounds and village sites, and 1 cave. It will be convenient to review them in that order.

Shell Mounds. Shoals in the Pickwick Basin afforded an abundance of shell-fish with the result that the banks of the river are lined with shell middens up to 18–20 ft. in depth. Of the 9 middens investigated, 5 were excavated thoroughly with particular attention to stratigraphy. (Lu° 25, Lu° 61, Ct° 27, Lu° 67, Lu° 59) The results were remarkably uniform and consistent. As the authors repeatedly emphasize, in all cases there was revealed a long cultural development marked by the successive introduction of new features, along with the continuence of older ones, which seem to have been only gradually and never completely replaced. The lowest levels in 3 sites indicate a period when bone was in use without flint. This was followed by the introduction of various flint types in succession, and finally, in the superficial levels, pottery. Flint types therefore assume the role of pottery as time markers for the main stratigraphy. This is a new departure for the Southeast and one that holds great promise for the future. Changes in burial types also occurred in a consistent fashion. The important point, however, is that, notwithstanding the introduction of radically new elements, older types persisted to such a degree that the authors are impelled to an interpretation of far-reaching consequences, to wit, that the whole development represents a single occupance over a long period of time. "These facts seem to suggest that such changes, as are apparent throughout the long history of this site (Mulberry Creek, Ct° 27), are wholly owing to the changes in the material culture of a single people over a long time" (266). Again: "Such overlapping of traits, shown in the generalized profile (Long Branch Lu° 67), would seem to forbid the attempt to account for stratigraphy on the basis of a shift in population. Since the users of the pottery used exactly the same flint types and approximately the same proportion as the 'pre-pottery' people, it would seem to be reasonable to suppose that they were the same people" (207). And again: "In every case, extensive excavations have tended to show a homo-

geneity in the complex—which is taken to mean that all shell-mound dwellers were basically the same people who developed their culture from simple beginnings to a much higher level during the long history of the shell middens" (311). In consequence the entire development, covering the full span of known occupation of the Pickwick Basin, except the very late period of shell-tempered pottery dominance, is formally classified as a focus of the Archaic pattern.

This is the exception promised above. For once stratigraphy speaks so plainly it must be heard. No classifier could be happy in the contemplation of a mere focus which comprehends everything from a culture lacking even flint to one dominated by pottery. This is the focus to end all foci. Yet in all conscience what else could the authors do? The stratigraphy plainly offered no opportunity for a break-down *that could be expressed by trait lists*. This is the important point. Your archaeologist unhampered by a classificatory bias, would find no trouble at all in breaking the series down into sequent periods, each marked by the appearance of a new type of material. Persistence of the older types would not bother him at all. But a unit in the McKern classification has to be set apart by differences, and if the differences are outnumbered by the similarities due to persistence then your classifier is helpless.

It is to be noted that pottery itself offers no exception to the rule of "revolution from within." Here a curious situation develops. While it is reasonably certain that fiber tempered ware is the first to appear in the shell mounds, it is by no means dominant on all sites. This lack of uniformity in respect to pottery deserves special emphasis. At Bluff Creek (Lu° 59) "Fibre-tempered ware is thus seen to have been most used, and to have been the first type *developed at this site*" (128). At Long Branch (Lu° 67) "It was suggested here that the limestone temper, 46% of the whole, was the pottery *first made by residents here*, and later clay and grit was substituted for limestone to account for an additional 30% of the whole" (207). At Mulberry Creek (Ct° 27) the Shell Mound people went in for clay tempering almost exclusively. "An examination of these results shows the dominance of the clay- and grit-tempered ware on this site. This is not comparable to any of the other shell mounds and, perhaps, indicates that *the center of development and dispersal of the clay-grit ware was at this site*" (261). [In all cases italics are mine.] In short, three different pottery "complexes," elsewhere associated with different culture groups and time periods, are here in the shell mounds merely late and seemingly interchangeable incidents in a homogeneous culture classified as Archaic. Note that in each case the authors indicate their belief that the pottery was made and used at the site. Haag, in the pottery section, presents a totally different point of view: "From the stratigraphic occurrences on the shell heaps themselves, it is concluded that few peoples of the shell mound complex itself knew pottery very intimately but rather the thin layer of pottery at the top accumulated quite rapidly since it came onto the sites by trade from a variety of sources" (523). This is one of several instances in which the reader is obliged to choose between Haag and the principal authors. Without first hand knowledge of the material the choice is practically impossible.

Copena Burial Mounds and Village Site. The five Copena burial mounds excavated (Lu° 63, Lu° 64, Lu° 54, Hn° 49 and Hn° 4) afford a sharpening of definition of the Copena focus and an extension of its area of distribution. More important is the possibility that in Lu^{v} 65 has been found at last a village site of this culture. The relationship of the limestone tempered pottery of this village site to the limestone tempered ware of the shell mounds, particularly Lu° 67 where limestone tempering was dominant, is nowhere discussed. This is just one angle of the failure to fit Copena into the general picture. Admirably treated from the analytical standpoint, Copena nevertheless remains in a vacuum so far as the main archaeological developments in the Pickwick Basin are concerned.

Of extraordinary interest was the finding of eastern Folsom type points at Lu° 54, Lu° 63 and Lu^{v} 65, the first two certainly, the third probably, Copena sites. No apparent importance is attached to these finds, their significance is not discussed, and "Folsom flint points" is quietly listed as a Copena trait as though such things were all in the day's work. The chronological position, is to say the least, anomalous. They might at least have had the decency to turn up in the lowest levels of the shell mounds. They will be dismissed as "strays" no doubt, but I think a candid comparison with typical Copena points will indicate a close typological relationship. So far as one can tell from the illustrations, without the median channels they would be practically indistinguishable from the common forms with which they were found. It looks very much as though the diagnostic artifact of our hypothetical "ancient hunting stage" in the East is here actually associated with a culture that is not even Archaic.

Domiciliary Mounds and Village Sites. The three sites in this group (McKelvey, Hn° 1, Seven-Mile Island, Lu° 21, and Koger's Island, Lu^{v} 92) present some teasing problems. The most interesting from my own point of view centers around the position of the clay tempered group of pottery types. The problem is important enough to warrant brief discussion of the three sites in turn.

The McKelvey site (Hn° 1) consisted of a pyramidal mound on top of a village site, intrusive burials in the upper levels of the mound. Pottery in the mound and village site beneath it was predominantly clay tempered with negligible percentages of fiber, sand and limestone tempered ware. There were a few shell tempered sherds in the village site, somewhat more in the mound. Pottery with the intrusive burials was entirely shell tempered. The conclusions are that the site comprises three "components" for which three separate peoples were responsible. A late Shell Mound people were responsible for the predominance of clay tempered sherds in the village site. Along came a people using shell tempered pottery and built the mound, using earth scraped from the village site with its admixture of clay tempered sherds, which accounts for the continued predominance of clay tempering in the mound. Finally the site was used for burials only by a still later people using shell tempered pottery and boasting a Moundville-like culture. With them we are not concerned. The point is the explicit separation of the clay tempered "people" from the shell temper using builders of the mound. "It would seem certain that this village midden, which was laid down before the building of the mound, was entirely due to a clay-grit pottery people who had nothing to do with the mound construction" (20). Haag counters with: "From the excavation of this site it was determined that the builders of this pyramidal mound were responsible for the large number of clay-grit sherds associated with the site" (522). He calls attention to similarities in some of these sherds to certain types in the lower Mississippi where, as is well known, pyramidal mounds do not hesitate to consort with clay tempered pottery. It is well to remember, however, that here in the Pickwick Basin the dominant treatment in the clay tempered pottery is check-stamped and cord-marked, so if we accept Haag's view we have an essentially Woodland pottery complex associated with pyramidal mound building. Again the reader has to choose between conflicting interpretations. The point is that there is a choice, that the stratigraphy on this site was evidently not so clear as to be susceptible to only one explanation.

The Seven-Mile Island site (Lu° 21) presents essentially the same problem. A pyramidal mound in two stages above an older "black sand" mound, shell tempered pottery dominant throughout with clay in second place and negligible amounts of fiber, limestone and sand tempered, wares, vertical distribution approximately equal except for a slight increase of clay tempering in the upper levels of the mound. This was accounted for by assuming that earth from an older village site in which clay tempering was dominant

had been used in the construction of the mound. "Since this type clearly preceded the coming of the shell tempered pottery people, it is easy to understand that the erection of the mound, first from the surface earth and later by going deeper into the old village, the clay-grit sherds began to appear in greater numbers in the top of the mound"(55). No evidence is given of the existence of this older village site. The statement: "Investigation at this site seemed to show that in the village about this mound there was a black sand layer in which the clay-grit tempered pottery was dominant" (55) is not backed up by descriptions of excavations outside the mound base if such were made. The black sand core of the mound, which one supposes represents this old village site actually showed a dominance of shell tempering. In brief, it appears that an older village site was hypothesized to account for a stratigraphic situation which otherwise would tend to show that both clay and shell tempered pottery groups were associated together in a pyramidal mound.

Koger's Island (Lu° 92) was a village and burial site with no mounds and no stratigraphy, even of the inferential sort described above. Pottery was overwhelmingly clay tempered with minor amounts of limestone, shell, fiber and sand tempering in that order. Pottery with burials was, as usual, shell tempered. In accordance with the type of reasoning we have already seen, it was assumed that two distinct peoples were involved, so all the material was divided into two "complexes," Koger's Island I and Koger's Island II, one to go with the clay tempered pottery, one to go with the shell tempered pottery. The first is related to the late Shell Mound culture, the second to Moundville. This method of re-creating non-existent stratigraphy by arbitrary sorting is sanctioned by custom in eastern archaeology. It is resorted to whenever it becomes necessary to prevent contamination of one classified culture type by another. The principle may be stated thus: "If things that are supposed not to be found together are found together, we may assume that the original stratigraphy has been disturbed, and we are at liberty to reconstruct it. In this connection, the McKern Classification is highly recommended."

Enough has been said to show that an extremely important clay tempered "complex" has been kicked around by the simple expedient of passing it off as a "late stage of the Shell Mound culture," notwithstanding its embarrassing tendency to crop up in association with pyramidal mounds, shell tempered pottery and other Middle Mississippi factors, with stratigraphy confused (i.e. subject of disagreement among the several authors), inferred or frankly non-existent. Can it not, with equal justice to the archaeological record, be regarded as an early stage of Middle Mississippi? The problem is basic in the Mississippi Valley. Clay tempering dominates the period (Coles Creek, Deasonville-that-was, Baytown, etc.) in which the crystallization of Middle Mississippi was taking place. Middle Mississippi sites in that area, unless very late, unfailingly show a clay tempered "component." The only hope of understanding Middle Mississippi is through fuller knowledge of this earlier clay tempered stage. Waving the classificatory wand over it avails nothing.

Getting back to generalities, the point that baffles the present reviewer is this: the authors find no difficulty in envisaging a continuous development "of the same people" from a stage without even flint to a stage marked by pottery of at least three distinct temper groups. Their remarks on this long cultural succession, emphasizing the introduction of new features without the corresponding loss of old ones, present what one feels to be a true picture of normal culture development. Yet when it comes to the question of placing Copena into relationship with this development, or the question of the relative positions of the clay and shell tempered groups, their interpretations are in an entirely different spirit, even to the point of reading into the archaeological record things which are not there. The explanation is, I think, sufficiently obvious. Their conclusions in re-

spect to these later questions are forced into conformity with classificatory preconceptions. The Shell Mound culture had not been previously defined, the authors were therefore free to let the facts speak for themselves and did so unreservedly. They allowed themselves to be "concerned with events as they occur in Nature" (Kroeber) and squared themselves with the classification by the dubious expedient of setting up the most inclusive, longest-lived focus ever seen. Such was not the case with Copena and Middle Mississippi. These "cultures" had been set apart by classification and apart they must remain. Discussion of the relation of Copena's limestone tempered pottery to that of the Shell Mounds would have involved entanglement of two distinct concepts, two patterns no less. Recognition of the possibility that clay tempered pottery, also a Shell Mound trait (in the author's view) may be tied up with pyramidal mounds would have tangled up a third, the Mississippi pattern. (The question as to how three distinct cultural patterns could have existed in the same small area in the comparatively short time indicated by the stratigraphy is a theoretical one, but may have to be answered some day.) The authors can scarcely be blamed for trying to avoid bringing three patterns down on their heads at one time.

Yet it is still permissible to wonder if it would not be possible for minds unhampered by classificatory considerations to interpret the later events in the Pickwick Basin as the authors have done for the earlier. If new elements came into the Shell Mound culture without undue disturbance to the existing pattern, why did not the same processes continue? Is it not possible to interpret a site like McKelvey (Hn° 1) as representative of a stage when new elements such as pyramidal mounds and shell-tempered pottery had come into use, leaving certain older elements intact and, in the case of clay tempering, even dominant? This view emphasizes the *connection* of clay tempered pottery with the new elements and seeks to understand its nature. The other emphasizes the *separation* of clay tempered pottery from the new elements and feels no need for understanding its nature. A "new people" can be brought in to account for it. In the present instance this can be done with a show of probability owing to the physical evidence for late a brachycephalization of the population. But as yet we know next to nothing of the exact nature of this physical change, when it took place, or what sort of cultural changes went with it, if any. In the Southwest, the view long held that the brachycephalization as between Basket Maker and Pueblo was marked by sweeping cultural changes is now regarded as naïve. New people undoubtedly came into the Pickwick Basin, not once but many times, but what effect their coming had on the pre-existing culture only archaeology can tell. Archaeology may be used to explain "new people" but "new people" cannot be used to explain archaeology.

It is manifestly unfair to belabor the authors of this admirable report with this sort of criticism, which is in effect directed against a method that practically dictates the kind of interpretation here objected to. The fortunate thing is that in interpreting the most significant portions of the excavations, the Shell Mounds, they were one jump ahead of the method and in consequence were able to present a faithful stratigraphic record that will be a comfort to the historically minded student of the Southeast for a long time to come.

PHILIP PHILLIPS
Peabody Museum
Cambridge, Mass.

SOCIETY FOR AMERICAN ARCHAEOLOGY
ANNUAL MEETING—1942

The seventh annual meeting of the Society for American Archaeology was held on May 8 and 9, 1942, in Cincinnati, Ohio, in conjunction with the twenty-first annual meeting of the Central States Branch of the American Anthropological Association. The headquarters for the meeting was the Gibson Hotel. The business meeting of the Society was called to order by the President, Glenn A. Black, about 5 P.M. on May 8.

The minutes of the sixth annual meeting were approved as printed in AMERICAN ANTIQUITY, Vol. 7 No. 2, Part I, pp. 202–203. The reports of the Secretary-Treasurer and of the Editor which are appended hereto were read and approved.

Mr. Andrew Whiteford, chairman, read the report of the committee on terminology which is appended hereto. The work of the committee and the report of its chairman were commended and approved. It was voted that the committee continue its work under its present chairman and that two additional members be appointed by the executive committee to serve in the place of Mr. Vladimir Fewkes, deceased, and Mr. Charles G. Wilder, who, at present, is not working in the field of archaeology.

The revised and amended Constitution for the Society for American Archaeology, as approved by the Council, was presented to the meeting. The committee on Constitutional Amendment consisted of J. Alden Mason, chairman, A. V. Kidder, W. C. McKern, Archibald Crozier, Maurice Robbins, Frederick Johnson and Robert H. Merrill.

The revised Constitution was read by the President. After discussion, the acceptance of the Constitution as amended and revised, was moved by Carl E. Guthe, seconded by Fay-Cooper Cole, and was passed unanimously. The amended Constitution goes into effect at once.

The slate of officers prepared by the nominating committee was read by the Secretary, in the absence of any member of that committee, which consisted of William A. Ritchie, chairman, F. H. H. Roberts and George I. Quimby.

President: Nels C. Nelson
1st Vice-President: Frederica de Laguna
2nd Vice-President: Henry B. Collins, Jr.
Council Members: Carl E. Guthe, and J. Gilbert McAllister

Nominations from the floor were called for. Doctor Alfonso Caso was nominated for First Vice-President. The nomination was duly seconded. It was then moved and seconded that the nominations be closed. A vote was taken by ballot for the position of First Vice-President and Doctor Caso was duly elected. Nels C. Nelson as President, Henry B. Collins, Jr. as Second Vice-President and Carl E. Guthe and J. Gilbert McAllister as Members of the Council were elected *viva voce*.

As a matter of unfinished business, the names of members who had been nominated Fellows this year and had been approved by the Council, were read. It was moved, seconded and unanimously carried that the following members be elected as Fellows and their election made a matter of record in the minutes of the meeting:

Robert M. Adams
John H. Bailey
Brewton Berry
John Otis Brew
Joseph R. Caldwell
Charles H. Fairbanks
William G. Haag
Philip Phillips
Paul F. Titterington
Winslow M. Walker

Clarence H. Webb

Mr. T. M. N. Lewis, Chairman of the committee on resolutions proposed the following resolutions: Resolved that:

The Society for American Archaeology wishes to express its appreciation to James B. Griffin, Gustav G. Carlson, and Richard Morgan for the excellence of the program and the arrangement of facilities for the meeting.

The Society wishes to express its thanks and appreciation to J. Alden Mason and his committee on amendment for the splendid revision of the Society's Constitution.

The Society wishes to express its sense of deep loss in the deaths of Vladimir J. Fewkes, David R. Dorn and Roscoe L. Johnson.

These resolutions were unanimously adopted and the Secretary was instructed to send copies of the resolution concerning deceased members to the bereaved families.

At the conclusion of business at 6 P.M. on May 8, the Annual Business meeting of the Society for American Archaeology adjourned.

The combined meetings of the two organizations lasted from Friday morning, May 8, to Saturday noon

May 9. Friday morning was devoted entirely to papers of the Society for American Archaeology, Saturday morning to those of the Central States Branch and Friday afternoon to a joint meeting.

At the Friday morning session the following papers were presented:

Three Diagnostic Points from Eastern Missouri. R. M. Adams, Academy of Science of St. Louis.

The Early Cultures of the Georgia Coast. J. C. Caldwell, University of Chicago.

Late Horizons in the Southeast. T. M. N. Lewis, University of Tennessee.

Culture Sequences in a Stratified Caddoan Mound Site (Belcher). C. H. Webb, Shreveport, Louisiana.

Excavation of a Middle Mississippi Mound and Village in New Madrid County, Missouri. W. M. Walker.

Excavation of Mound F, Angel Mounds Group, Vanderburgh County, Indiana. G. A. Black, Indiana Historical Society.

The following papers were read by title only:

Progress Summary of the Archaeological Survey of the Natchez Trace Parkway. Jesse D. Jennings, National Park Service.

Adena House Types in Boone County, Kentucky. W. S. Webb, University of Kentucky.

Negative Painting and the Spread of Middle Mississippi Culture. Philip Phillips.

On Friday afternoon, the following papers were given:

Indian Mounds National Monument in Prospect. C. R. Keyes, Cornell College.

The Location and Delimitation of Archaeological Sites by Means of Divergent Vegetation. V. H. Jones, University of Michigan.

Mechanically Counting by Fives, Maya Style. R. H. Merrill, Grand Rapids, Michigan.

An Interpretation of Siouan Prehistory. J. B. Griffin, University of Michigan.

The Present Status of Ohio Archaeology. R. G. Morgan, Ohio State Museum.

The "Neolithic" in the Near East. R. J. Braidwood, University of Chicago.

The combined annual dinner of the Society and the Central States Branch was held on Friday evening. Following dinner, a symposium led by Carl E. Guthe was held on *Anthropologists in the National Emergency*.

THORNE DEUEL, *Secretary*

REPORT OF THE SECRETARY

The sixth annual meeting of the Society for American Archaeology was held on May 9 and 10, 1941, at Minneapolis, Minnesota, in conjunction with the 20th annual meeting of the Central States Branch of the American Anthropological Association. The minutes of this meeting were printed in AMERICAN ANTIQUITY, Vol. VII, No. 2, Part 1 (October, 1941) pages 202 and 203.

As a result of efforts to increase the Society membership, 71 affiliates and 28 institutions were added. The Society lost by death one Fellow, Vladimir J. Fewkes and two Affiliates, David R. Dorn and Roscoe L. Johnson.

Membership:	May 9, 1941	Added	Withdrawn	May 9, 1942
Life Fellows and Affiliates	11	none	none	11
Fellows	70	19	3 deceased* 3 withdrawn	83
Affiliates	690	71	3 deceased	758
Institutions (incl. 5 Complimentary)	95	29	none	124
	866	119	9	976

* NOTE: Two deceased fellows were not dropped until July 1, 1941. The other members who were withdrawn in July were deducted in May 1941. Consequently, the increase in membership since the last annual meeting is not as great as it appears to be when comparing the two reports.

The Council approved a regional meeting held at Andover, Massachusetts, in conjunction with the annual meeting of the American Anthropological Association from December 27 through 30, 1941. The Council also approved a regional meeting of the Society for American Archaeology to be held in connection with the Southwest Meeting of the A. A. A. S. at Las Cruces, New Mexico, April 27 through 30, 1942. One session was devoted to Archaeology and Dr. Emil Haury was chairman.

At the annual meeting of the Eastern States Archaeological Federation, on November 7 and 8, 1941, held at Philadelphia, Pennsylvania, a brief history of the growth of the Society for American Archaeology written by the Secretary was read.

The President at the request of a number of the members appointed a committee to study the revision of the Constitution, and to prepare a revised version for presentation to the annual meeting. Notices that

revision of the Constitution was under consideration were sent to the membership sixty days before the annual meeting.

Respectfully submitted,
THORNE DEUEL, *Secretary*

REPORT OF THE TREASURER

The present balance (May 1, 1942) of the Society stands as follows:		
Working Fund	$ 213.63	
Permanent Fund	580.52	$ 794.15
Gross Receipts		
Balance on Hand as reported May 1, 1941		647.93
Dues:		
1939–40	$ 6.00	
1940–41	365.50	
1941–42	2106.25	
1942–43	169.50	
1943–44	3.00	
1944–45	1.00	2651.25
Sales of back volumes of AMERICAN ANTIQUITY	$ 243.00	
Sale of single copies, AMERICAN ANTIQUITY	13.75	256.75
Sale of NOTEBOOK		1.25
Reimbursements (Reprints and illustrations)		1163.57
Received for Bank Charges		1.25
		$4722.00
Gross Disbursements		
Error 50 cents in report of May 1, 1941		.50
AMERICAN ANTIQUITY		
Printing, illustrating, distribution	$3000.55	
Reprints	227.22	3227.77
THE NOTEBOOK		
Supplies and Postage		153.90
SECRETARIAL ASSISTANCE and Clerical Help ($10.00 per mo.)		
Office of Editor	$ 105.00	
Editor's Assistant ($50 per quarter)	200.00	305.00
Office Expense of Editor		17.75
Stationery and Printing		182.00
Postage		16.54
Bank Service and exchange charges		15.57
Discounts to subscription agencies (prior to July 1, 1941)		1.57
Refund to John Rinaldo for overpayment of Reprints		7.25
Cash on hand May 1, 1942		794.15
		$4722.00
Resources		
Cash on hand May 1, 1942		794.15
Due from 1940–41 dues		57.00
Due from 1941–42 dues		192.00
Due from Reimbursements (Reprints, illustrations, etc.)		99.44
		$1142.59
Liabilities		
Dues for 1942–43 already paid		169.50
Dues for 1943–44 already paid		3.00
Dues for 1944–45 already paid		1.00
Amount due for printing April, 1942, AMERICAN ANTIQUITY		
Office Help—April issue NOTEBOOK	(Not Received)	
Postage for April issue NOTEBOOK		
		$ 173.35

Respectfully submitted,
THORNE DEUEL, *Treasurer*

EDITOR'S REPORT

With the publication of the April number of AMERICAN ANTIQUITY the Society closes its seventh volume comprising 432 pages, the largest yet published. It appears at the present writing that an equally large volume will not be possible for the coming year although papers in sufficient numbers and of a high standard of quality have been submitted to the Editor. What the war will bring remains to be seen, but every effort will be made to continue AMERICAN ANTIQUITY at a size of 96 pages per issue.

The year just closed has been marked by two innovations in the field of publication. After due consultation with the officers of your Society, the Editor accepted from Mrs. Dorothy L. Keur the manuscript for "Big Bead Mesa; An Archaeological Study of Navaho Acculturation 1745–1812," the first of the Memoir Series, published as Volume VII, No. 2, Part 2 of AMERICAN ANTIQUITY. Costs of publication were borne entirely by Mrs. Keur.

The second innovation came with the publication of what have been termed "regional issues" of the journal in which a number of papers relating to the same area are published together along with a combined bibliography for all papers. Correspondence received after the release of the January issue suggests that this treatment of the journal may meet with widespread approval. Publication of the extensive bibliography should prove of great value and service to students. Present plans call for a regional issue twice each year with an open issue for each of the intervening numbers.

The regional issue seems one approach to the problem of making the journal more appealing to the general student and to nonprofessional readers who frequently complain, and with much justice one must agree, that many papers appear as isolated specialized releases without any appeal to the general student or lay reader. The ideal solution to this problem would be the publication, from time to time, of papers treating areas in a general way and bringing the reader up to date on recent events. Unfortunately, there are few of our members who are either capable of such a job or willing to undertake one. With the exception of papers by Mason and Haag none have been available for publication, and it has not been feasible to publish promises made by other authors.

Because of the ephemeral or personal character of much of the Notes and News, this department has been under close scrutiny. In view of present difficulties it may prove advisable to eliminate all but the most important notes.

The NOTEBOOK continues in demand from many correspondents, although few are interested enough to write for it. Releases appeared this year as material came to hand since there were not enough papers to make six issues possible. In view of this situation it is your Editor's earnest recommendation that publication of the NOTEBOOK be suspended before a shortage in funds makes it necessary to cut the journal below the 96 page limit.

Respectfully submitted,
DOUGLAS S. BYERS, *Editor*

REPORT OF THE COMMITTEE ON ARCHAEOLOGICAL TERMINOLOGY, MAY, 1941, TO MAY, 1942, APPOINTED BY THE SOCIETY FOR AMERICAN ARCHAEOLOGY AT INDIANAPOLIS, APRIL, 1940

Since the last report of this committee to the Society two more questionnaires have been circulated to the various institutions, a preliminary statement of results has been issued on the results of one of these, and a second questionnaire has been released by the committee for stone artifacts.

The two most recent questionnaires which have been issued are the work of the sub-committees for design terminology and for burial terminology, both headed by James B. Griffin. In addition to the questionnaire, the sub-committee for burial terminology has been able to release a preliminary statement of its results in the latest issue of the NOTEBOOK.

The second questionnaire of the sub-committee for stone artifacts also appeared in the latest number of the NOTEBOOK and presented in addition a statement concerning the results of the first returns.

Some of the other sub-committees expect to circulate some material in the near future and, in view of current events, it can be said that certain groups within the committee have made encouraging progress. Several of the members returned to school during the year and were unable to give time to this work and others have joined the armed forces.

Submitted to the Society for American Archaeology, May, 1940.

THE COMMITTEE ON ARCHAEOLOGICAL TERMINOLOGY

SOCIETY FOR AMERICAN ARCHAEOLOGY

Revised Constitution

ARTICLE I—NAME

The name of this organization shall be the SOCIETY FOR AMERICAN ARCHAEOLOGY.

ARTICLE II—OBJECTS

Section 1. The objects of the Society shall be to promote and to stimulate interest and research in the archaeology of the American continents; to encourage a more rational public appreciation of the aims and limitations of archaeological research; to serve as a bond among those interested in American Archaeology, both professionals and non-professionals, and to aid in directing their efforts into more scientific channels; to publish and to encourage the publication of their results; to foster the formation and welfare of local archaeological societies; to advocate and to aid in the conservation of archaeological data; and to discourage commercialism in the archaeological field and to work for its elimination.

Section 2. The practice of collecting, hoarding, exchanging, buying or selling archaeological objects for the sole purpose of personal satisfaction or financial gain, and the indiscriminate excavation of archaeological sites are declared contrary to the ideals and objects of the Society.

ARTICLE III—MEMBERSHIP

Section 1. The membership of the Society shall consist of five classes: Active Members, Institutional Members, Life Members, Benefactors and Honorary Members.

Section 2. Persons in sympathy with the objects of the Society may be elected members. Such election shall be preceded by a properly executed application, accompanied by the indicated dues, filed with the Secretary, which application shall state the business or professional connections of the applicant and the nature of his interest in American archaeology. It shall be endorsed by two members in good standing, at least one of whom shall know the applicant personally. The applicant shall also give written subscription to the ideals and objects of the Society.

Section 3. The Secretary and/or Treasurer shall examine applications for membership and shall elect or reject the applicant. The Secretary shall then notify the applicant of his election and he shall receive all the Society's publications for the fiscal year covered by his dues.

Section 4. Residents of any country are eligible for membership.

Section 5. The annual dues of Active Members shall be three dollars.

Section 6. The Council may, for adequate cause, by three-quarters vote, release any Active Member from payment of annual dues for the past year or for the ensuing year.

Section 7. Any Active Member may become a Life Member by the payment at one time of seventy-five dollars, less half the total amount already paid by him in annual dues.

Section 8. Any Active Member may become a Benefactor by the payment at one time of two hundred and fifty dollars or more. Life Members may become Benefactors by an additional payment of one hundred and seventy-five dollars or more. Benefactors may designate a library or other scholarly institution which shall, without further payment, receive in perpetuity all the regular publications of the Society.

Section 9. Any foreign scholar of distinction in American Archaeology, not resident in North or South America, may be elected an Honorary Member by three-fourths vote of the members present at an annual meeting, after favorable recommendation by the Council. The total of Honorary Members shall not exceed ten, nor shall more than two be elected in any year.

Section 10. Life Members, Benefactors and Honorary Members shall have all the privileges of membership but shall be exempt from the payment of dues.

Section 11. Institutions and libraries desiring the Society's publications shall be designated Institutional Members. They shall not be entitled to send representatives, or to vote or to hold office, or to become Life Members. They shall not be required to provide Sponsors.

Section 12. The Society shall not approve of applications for membership from persons who habitually misuse archaeological objects or sites for commercial purposes. The Council may, by three-quarters vote, remove from the membership rolls any member who does so, or who otherwise makes improper use of his membership.

ARTICLE IV—OFFICERS

Section 1. The officers of the Society shall consist of a President, two Vice-Presidents, a Secretary, a Treasurer, an Editor, an Associate Editor, and eight Councillors. These shall constitute the Council. The President, Secretary, Treasurer, Editor, the President for the preceding year, ex officio, and the two senior members of the Council shall compose the Executive Committee of the Council.

Section 2. Officers shall be elected at the annual meeting, shall assume office at the close of the meeting and shall serve until their successors are installed. The President and the Vice-Presidents shall be elected for one year, the other officers for four years. Two of the Councillors shall be elected at each annual meeting.

Except as hereinafter specified, the officers shall perform the duties customary to their respective offices.

Section 3. The administration of the Society shall be entrusted to the Council. Nine shall constitute a quorum at its meetings.

Section 4. Between annual meetings of the Society the Executive Committee shall meet at the call of the President. It shall have the power to fill vacancies in offices until the next annual meeting and to take in the Society's name and behalf any action that the Society as a whole could take, but all its acts shall be reported to the Society at the next annual meeting.

Section 5. The President may on his own initiative, and shall at the written request of any member of the Council, ask the Executive Committee to vote on specific questions by mail, and if a majority should vote by mail for or against any measure thus submitted, that vote shall be as decisive as if a meeting had been held. If any member of the Council or of the Executive Committee is unable to attend a meeting he may, by written proxy, appoint another member of the Society to attend and to vote in his stead. But no person shall by virtue of holding proxies have the right to cast more than one vote.

Section 6. The President and the Secretary shall have power to and should sign all written contracts and obligations authorized by the Executive Committee on behalf of the Society but basic contracts for printing and other matters necessary to publication shall be signed by the President and the Editor and suitable arrangements for the deposit and withdrawal of funds may be made by the Treasurer alone, on his own signature as Treasurer.

Section 7. The Secretary shall maintain the central office of the Society, which shall serve as a clearing house and advisory center on archaeological matters. He shall have general charge of executive matters under the direction of the President and shall act as agent for the Society in correspondence dealing with archaeological matters. He shall transmit to the Editor such information of general interest as warrants publication. He shall make an annual report which shall embody all the actions of the Executive Committee. He may, subject to authorization and budgetary provision by the Council, employ clerical assistance.

Section 8. The Treasurer shall administer the finances of the Society subject to the budget and other regulations approved by the Council. He shall render an annual report. He shall maintain the membership list and provide the mailing list for publications of the Society, shall have charge of the care and sale of surplus copies. He may be required to give bond, and may, subject to authorization and budgetary provision by the Council, employ clerical assistance.

Section 9. Nothing herein shall be construed as prohibiting the consolidation of the offices of Secretary and Treasurer.

Section 10. The Editor shall have full charge of all publications of the Society under the direction of the Council, and shall make an annual report. He shall be empowered to make minor adjustments involving not over one hundred dollars in the basic contracts relating to publications and may enter into agreement with individuals and institutions for financing publications. He shall certify to the Treasurer all bills relating to publishing obligations. He may, with the consent of the Council, appoint an Editorial Board to assist him, which Board shall, as far as practicable, represent the various geographic or cultural areas, and the fields of interest in American archaeology. He may, subject to authorization and budgetary provision by the Council, employ clerical assistance. The Associate and Assistant Editors shall serve under the direction of the Editor and shall be responsible to him.

Section 11. The officers of the Society shall be elected by majority ballot of the members present at the annual meeting, after open nomination, including the nominations proposed by the Council.

ARTICLE V—AFFILIATIONS AND DIVISIONS

Section 1. The Society may affiliate with other organizations and may elect delegates and representatives to such.

Section 2. The Society may by vote of the Council establish regional divisions, branches or sections, and contribute towards their operation. Such divisions shall promote the objects of the Society in their respective regions. In internal organization they may function as independent societies but the presiding officer and at least half the membership of such divisions shall be members of the Society.

ARTICLE VI—MEETINGS

Section 1. The Society shall hold an annual meeting at a time and place to be designated by the Council. The attending members shall constitute a quorum. At this meeting the business of the Society shall be transacted, archaeological papers and other matters of scientific interest presented, and symposia and discussions may be held. The annual meeting of the Council shall be held at this meeting, preceding the business meeting. Special, joint, or regional meetings may be held at other times with the approval of the Executive Committee.

Section 2. Special meetings of the Council may be held at the call of the President with the concurrence of the Executive Committee. The President shall call a special meeting of the Council at any time upon the written demand of five members thereof.

Section 3. Notices of regular meetings shall be published in the Society's Journal at least two months

in advance, and announcements, accompanied by a preliminary program, shall be sent to members at least two weeks in advance. Notices of special meetings shall be sent to members at least one month in advance.

ARTICLE VII—COMMITTEES

Section 1. Unless otherwise provided, the President shall appoint all committees of the Society and of the Council, and shall be ex-officio a member of every committee.

Section 2. The standing committees of the Society shall be the Budget, Auditing, Nominating and Program committees which shall exercise the functions usual to these committees. They shall present reports to the Council before the annual meeting for consideration and recommendations.

Section 3. The Budget Committee shall consist of the Executive Committee, with or without additional appointments. It shall review the finances of the Society and shall recommend to the Council a budget of expenditures for the ensuing year.

Section 4. The program Committee shall plan the programs for the annual and for special meeings. It is empowered to set dates for the receipt of titles, to solicit scientific papers and to accept or reject them, to demand abstracts and to plan symposia.

Section 5. The Nominating Committee shall be appointed at least six months before the annual meeting and the names published in the next issue of the Society's Journal, with an invitation for suggestions for nominees for officers for the next year.

ARTICLE VIII—PUBLICATIONS

The Society shall publish a journal which shall be devoted primarily to scientific articles on American Archaeology. Other publications may be issued as the Council may direct. All regular publications issued during a fiscal year shall be sent to members of all classes not in arrears for dues and may be sold as individual issues.

ARTICLE IX—FINANCES

Section 1. The fiscal year of the Society shall begin May 1.

Section 2. Annual dues shall be payable on May 1. Members 90 days in arrears shall not be entitled to receive the Society's publications or to vote and those one year in arrears may, after formal notification, be dropped from the rolls. Members thus dropped may be reinstated by payment of their arrearages in which case they shall receive the withheld publications, or they may be reelected.

Section 3. Payments made to establish Life Memberships and Benefactorships, and such other moneys as may from time to time be designated for that purpose, shall constitute a Permanent Fund which shall be invested in the name of the Society. The Council may direct the transfer of sums of money from the Permanent Fund to the Working Fund provided that the total of the Permanent Fund is never reduced below the total sum of payments of all living Life Members, all Benefactors and all sums which must remain in the Permanent Fund by conditions under which they may have been received. The income from annual dues, and from investments and other sources, shall constitute the Working Fund, available for publications and other current expenses, as the Council may direct.

Section 4. The Treasurer and two members of the Society, appointed by the Executive Committee, shall be the trustees of the Permanent Fund.

Section 5. No financial obligation in excess of available funds in the treasury shall be assumed by the Council except when approved by a two-thirds vote of the membership of the Society present at a regular annual meeting; provided, that for the purpose of this section, estimated receipts from annual dues for the current year may be considered as available funds.

ARTICLE X—AMENDMENTS

Section 1. Proposed amendments to this Constitution shall be sent to the Secretary, signed by at least five members, and shall be voted upon at the next annual meeting. The text of any proposed amendment shall be sent by the Secretary to all members at least thirty days before said meeting. If approved by the Council it may be adopted by a majority vote of the members present, but if disapproved by the Council a two-thirds vote shall be required for adoption, provided that at least thirty members vote. Amendments shall go into effect immediately upon adoption, unless otherwise specifically provided.

Section 2. The provisions of this Constitution as amended May 8, 1942, shall go into effect immediately upon adoption and shall supersede and nullify all previous Constitutional enactments and by-laws in conflict therewith, and all amendments not mentioned herein. Offices herein provided for and already elected shall complete their terms without required reelection.

FACTS AND COMMENTS

Taxonomy and the Direct Historical Approach. W. C. McKern 170
The Historical Approach to Art in Archaeology in the Northern Woodlands. Frank G. Speck 173
An Unusual Pipe from Hadley, Massachusetts. W. J. Howes 175
An Inexpensive Method of Recovering Skeletal Material for Museum Display. Conrad B. Bentzen 176

BOOK REVIEWS

Morris and Burgh: *Anasazi Basketry, Basket Maker II through Pueblo III, a Study Based on Specimens from the San Juan River Country* (Brew) . . . 187
McGregor: *Winona and Ridge Ruin, Part I, Architecture and Material Culture* (Roberts) 188
Bell and Castetter: *The Utilization of Yucca, Sotol, and Beargrass by the Aborigines in the American Southwest* (Jones) 190
McGregor: *Southwestern Archaeology* (Brew) 191
Webb and DeJarnette: *An Archaeological Survey of Pickwick Basin in the Adjacent Portions of the States of Alabama, Mississippi, and Tennessee.* With additions by Walter B. Jones, J. P. E. Morrison, Marshall T. Newman, Charles E. Snow and William G. Haag (Phillips) 197

INFORMATION FOR AUTHORS

AMERICAN ANTIQUITY is concerned primarily with archaeological matter, but articles dealing with related fields may be accepted providing that their connection with the archaeological field is clear. Manuscripts must be typewritten on standard 8½×11 paper, on one side only, double spaced. Articles should not exceed a length of 7500 words without subsidy by the author.

Bibliographies must follow a standard form; citations from journals should be given as follows:

Jenks, Albert E. and Lloyd A. Wilford.
1938. "The Sauk Valley Skeleton." *Bulletin of the Texas Archeological and Paleontological Society*, Vol. 10;

citations of separate books or reports:

Jenks, Albert E.
1936. *Pleistocene Man in Minnesota.* University of Minnesota Press.

Illustrations over and above one page of half tones or the equivalent in line cuts must be paid for by the author. Photographs for reproduction should be on glossy paper, unmounted, and of a size suitable for reduction to 4½×7 inches, or a portion thereof, making due allowance for captions. Line drawings should be in India ink on a smooth, hard-surfaced paper, with figure numbers written lightly in pencil on the margin or back.

Reprints (without covers) will be supplied at the following prices:

COPIES	1–4 pp.	5–8 pp.	9–12 pp.	13–16 pp.	17–20 pp.	21–24 pp.	25–28 pp.	29–32 pp.
25 copies	$2.00	$3.65	$ 5.65	$ 5.75	$ 7.65	$ 8.65	$ 9.90	$10.50
50 "	2.50	4.00	6.25	6.50	8.50	9.75	11.25	12.00
75 "	2.75	4.40	6.90	7.25	9.40	10.90	12.65	13.50
125 "	3.25	5.15	8.15	8.75	11.15	13.15	15.40	16.50
175 "	3.75	5.90	9.40	10.25	12.90	15.40	18.15	19.50
275 "	4.75	7.40	11.90	13.25	16.40	19.90	23.65	25.50

Covers with title and date of issue of American Antiquity will be furnished at the following rates: 25 for $2.25; additional covers 1½ cents each. Plates will be furnished at 100 for $1.00.

Cost of transportation of the reprints (postage or express) will be charged to the author.